

THE WESTSIDE BARBELL BOOK OF METHODS

By Louie Simmons

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Part I

FOREWORD

FOREWORD FROM THE EDITOR

WESTSIDE STRENGTH TRAINING FUNDAMENTALS

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The Regulation of Training

Percent Training

Time in Strength Training

Importance of Volume

TRAINING METHODS

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WESTSIDE SYSTEM INTRODUCTION

DEVELOPING SPECIAL STRENGTHS

FOREWORD



Lou in front of record board

My powerlifting memories start in 1966, just one month before my induction into the army. I feel like Captain Ahab with his obsession with Moby Dick. I am strapped to powerlifting. I know I will be pulled to my chalky death by it eventually, but I can't stop. All my memories and all my friends are involved in powerlifting so I am drawn to it even more today than ever. This is my story as I remember it.

My first exposure to powerlifting was at a power meet in Dayton, Ohio, late in 1966. I had Olympic lifted since I was 12 and competed at 14, doing a 175 snatch and a 260 clean/jerk at a body weight of about 155. I really thought I was a strong guy until that first power meet. There were 11 men in the 165s, and I got tenth place, beating only a 55-year-old dude.

This was an eye opener for me. I never Olympic lifted again. My Olympic lifting training partners should have worn signs saying "I lift weights" because if they were brought into court for it, the case would be thrown out for lack of evidence. However, the powerlifters I saw not only were strong but looked like they were strong.

One of these men was Milt McKinney, a future world champion in the 132s. George Crawford was amazing at 165, trying a 525 world record squat with legs like tree trunks. He later squatted

650 at 165 with no gear back when 500 was good. George was the first to help me with my squat form. He was always helpful at meets. His son came to visit years later, and it was my honor to help him. Vince Anello was in the meet as well, showing signs of his deadlift prowess even then. Vince told me once that anything made his deadlift go up. He was doing the conjugate system without knowing it. I just saw Vince at the 2004 IPF World Bench Championships in Cleveland, Ohio. He still looks great.

That meet in 1966 was my introduction to Larry Pacifico. He would become one of the greatest lifters I ever saw. There was nothing I did not do to try to beat him. However, I never did, nor did anyone else until injuries and a technical error in the 1980 Senior Nationals cost him his chance to win ten worlds in a row. He gave advice on benching, which was to gain weight and work your triceps. Larry's son is becoming quite a shot putter, throwing 60 feet as a ninth grader. This group, along with Ed Matz and a few top lifters around the world, had a network of training knowledge at their disposal, which was a major factor in their success. Today we have the internet, but unfortunately, many use it to bad mouth each other, cry about their training partners, or, worse, be a legend in their own mind.

After that power meet, I went into the army. The next month I was in the infantry but did not go to Vietnam. Instead, I was sent to Berlin, I think, because of my father's untimely death in 1968. Now, I could train fairly regularly, but my lifts were going nowhere. No one knew anything about powerlifting.

One day I picked up a *Muscle Power Builder*, which later became *Muscle and Fitness*. In that magazine, there was a powerlifting article about the Westside Barbell Club of Culver City, California. It was about box squatting. I had never heard of this, but with nothing to lose, I gave it a try. To my amazement, the box squats worked to the point that I later made top ten squats in five weight classes.

Through those articles, Bill West, George Frenn, and the guys got me started on the right foot. I was never able to visit Westside in Culver City due to work, which I regret to this day. After getting out of the army in 1969, I built a power rack, got some weights, and started training full-time using what I learned from the articles. They were my only training partners. After Bill West died, I referred to my place as Westside Barbell but never publicly until 1986. Westside Barbell is a trademarked name (and so is Louie Simmons).

I often wondered if I was on the right track with my training. Roger Estep was doing a 1600 total in the early 1970s. Then, out of nowhere, he made an 1800 total. I asked him how he jumped 200 lbs so quickly. He said he went out to Westside in Culver City, and the rest WAS history. Chuckie Dunbar, Jack Wilson, Luke Iams, Paul Sutphin, and some others were known as the Wild Bunch and were a very strong team. They proved to me that I was on the right track. My problem was that I had no training partners. When I went to meets, I asked lifters who excelled in each lift for tips on that lift. When it came to benching, Larry Pacifico was always telling me to train my triceps and lats.

I was lifting in Indiana and met Bill Seno. This dude was huge. He had won best chest in many Mr. American contests but was also the American record holder in the bench press. I also asked Bill how to get my bench up to a top ten lift (at the time there was only a top ten). First, he stared at me. Then, he grabbed me by the arms and said I needed to do illegally wide benches for a six rep max. When progress stopped, he told me to go up to eight reps and then to ten reps with one to failure. I hated the higher reps but the sixes pushed my lousy 340 at 181 to 445 at 198 and

then finally 480 at 220 and a top eight bench. Bill was a close-grip bencher, and he was telling me to bench extra wide? What gives?

In the end, he knew what he was talking about. Bill was training with Ernie Frantz. Ernie was 12 or 13 years older than me. A former bodybuilder turned powerlifter, Ernie was old by my standards but not old-fashioned. He was and still is on the cutting edge with power gear—denim shirts and canvas squat suits, which are still some of the best today. For years, he was a top 181, 198, and 220. He also formed the APF and WPC to lift some of the restrictions of the IFF. His wife, Diane, was also a top lifter in the 1980s. There were top lifters such as Jack Barnes, who could out-squat everyone at 181 and 198 and John Kanter at 242 with a 2000 total. The heavyweights were always in the limelight—John Kuc; Jim Williams, one of the greatest benchers of all time; and Jon Cole, who made a 2370 total at 286 with no gear.

I entered my first national meet, the Junior Nationals in Patterson, New Jersey, in 1971. I got third. I thought I had second place locked up until Joe Spack, also known as Spack the Wack, came out and pulled a 650 deadlift to push me into third. I made the top ten in 1972 in *Powerlifting News*, a Dan Dewelt publication that was the predecessor to Mike Lambert's *Powerlifting USA*. In 1970, I met Herb Glossbrenner, who thanklessly keeps stats to this day. Herb and Mike keep it real for everyone.

My arch rival was George Clark. This guy was built like a tank. He always beat me by 40–50 lbs. But what made it worse was that when he arrived anywhere, everyone stopped and stared at him because he had muscles that did not have names yet. I dreamed about beating him every day of my life, but I never did. I did outlast him though.

I made my first Elite total in February 1973 in Toledo, Ohio. I did 605–380–670 and a 1655 total. At that time, there wasn't any gear. I almost made a 700 deadlift. Many good lifters, including Bill Ennis and Ed Matz, participated in that meet. It was known as the Key to the Sea. The Chattanooga Open was a big but not national meet as well. After that meet, I said to myself that my back was indestructible. Boy, was I wrong. I broke my fifth lumbar vertebra. I was on and off crutches for ten months and in severe pain. I could not do any exercises that had made me strong before. By luck, I came up with the Reverse Hyper. It first helped the pain, and then it repaired my back to its former strength.

Walter Thomas was new and on the rise in the early 1970s. Inaba, Precious McKenzie, Eddie Pengelly, and Ron Collins were making names for themselves. Powerlifting was becoming international. The IPF was formed to organize the first world power sport. The AAU had run powerlifting in the beginning. The early 1970s were the springboard for United States powerlifting. Many Canadians lifted in our meets in Ohio. I don't think Dr. Di Pasquale was one of them, but everyone knows him today by his column in *Powerlifting USA*. Many powerlifters hang on forever. Bob Cortes was in many meets in the early 1970s. I recall he was older than dirt then, and he is still lifting today.

In the 1971 Junior Nationals, I broke the squat record with 565, breaking the mark held by Tony Fratto, who was a huge influence in my squatting. It's funny how although you were competing against these great lifters, they were also great men. They were the pioneers of this great sport. I trained by myself until I saw Doug Heath at Ohio State University. He was strong as hell but really eccentric to say the least. He had many great contests with Ron Mercer of the Glass City Power Team in Toledo. Doug is still strong today, making top ten lifts. After my back injury, it took me a few years to reach top form again. Spanjian supersuits came on the scene. They did

not do much, but I was glad to have some support. I recall that they cost \$24.00. Bob's Belts supplied a four-inch power belt, which I still use today.

Larry Pacifico was not only lifting big but was putting on the greatest power meets ever. I lifted in the 1977 Junior Nationals in Lincoln, Nebraska. It was the first time I saw Fred Hatfield. He would become a squatting machine, maybe the greatest pure squatter of all time. I met a kid there who told me he was going to break the world record in the bench at 148. His name was Mike Bridges. He did break the record. I never saw such a lifting machine. He was and is the strongest man under 200 lbs that I ever saw. If he would choose to use the best gear of today, it would be crazy. My friend, Arnold Coleman, broke Mike's and Gene Bell's total record at the 2005 Arnold Classic. I was amazed to see Arnold break these records. It was unexpected, but the unexpected is commonplace today.

Sam Mangialardi, Dennis Reed, and Henry Waters were making big noise as well as Clyde Wright, Larry Kidney, and Paul Wrenn, who at super heavyweight sure could squat deep. I was now a 198. Estep, Jones, Cash, and my new training partner, Gary Sanger, were doing big lifts. In 1978, I was strong again—fourth in the squat, seventh in the deadlift with 710, and fifth in the total at 1825. I wanted to go to 220 but had a hard time gaining weight. I thought my injuries were behind me so I went to the 1979 Senior Nationals. Bridges was killing then, but Ricky Crain was right there. Walter Thomas was at the top of his game. I was there to beat Pacifico like everyone else. I did everything I could to beat him, but—of course—I didn't and neither could anyone else.

The 1979 Seniors was known as the Meltdown in Mississippi for good reason. Bill Kazmaier was making a name for himself and had planned to dominate the meet. I was sitting poolside with some lifters when Bill said, "Beam me up, Scotty." His luck got worse when he bombed out with an 804 deadlift. He would have won by over 100 lbs. It was very humid, which caused many missed deadlifts. I weighed only 212 and made a 733 PR squat and a PR bench of 462. My opener of 677 would place me second behind Larry Pacifico. I pulled the weight easy, but as I locked it out, my grip slipped a little. The head referee was looking at my hand, and then my bicep tore loose, causing me to drop the bar. My second place quickly became no place. What a meet. Only two made a total—Larry and Dr. Steve Miller. To this day, people ask me, "Where's your bicep?" I reply, "Bay St. Louis, Mississippi."

Two surgeons recommended surgery, but one said no and that's the way I went. Many people asked if I was going to lift again. I said, "Hell yes." Six months later, in January 1980, at the Y Nationals, I was back. I squatted 765, benched 480 (my first top ten bench), and deadlifted 705 to total 1950. It was the third best total ever for a short time. That's the good news. The bad news was that I had hurt my groin and lower abs. I was in extreme pain, but I was getting to like pain, maybe a little too much.

Next stop, the 1980 Senior Nationals in Wisconsin. I opened with 722 but failed. I made my second attempt but with a lot of pain and a popping sound. For the first time, I used my head and passed the rest of the meet. Ernie Hackett, a world record holder and physical therapist, looked at me and said I had torn tendons of the pelvic bone and some lower ab muscles. He was right, and I was out for a while.

Meanwhile, Larry Pacifico had won his ninth world championship at the 1979 Worlds in his hometown of Dayton, Ohio. Japan, England, and Canada had world champs along with the United States. At the 1979 Worlds, Lamar Gant beat Precious McKenzie at 123 by pulling a 617

deadlift. The world record was 551, and Lamar made 617 to a standing ovation, the only one I've ever seen. With there being only one federation, my main goal was to do top ten lifts in my third weight class. I had some time to think about training. I knew I was doing something wrong because I was stronger in training than at the meets. After breaking my fifth lumbar vertebra for the second time in 1983, I sought medical advice. The doctor wanted to remove two disks, fuse my back, and remove bone spurs. I said, "No way, Jose." Larry's string of worlds stops at nine after jumping 2.2 k's on his second attempt, negating a third.

Dan Wohleber pulled the first 900 deadlift. Dave Waddington squatted the first 1000 squat. Mike McDonald got a 512 bench press at 181 body weight. Remember, no shirts!

While I was recovering from my back injuries, I found every book on training methodologies from the old Eastern Bloc that I could. I was determined to outlast my rivals. There were many bright stars, but the brightest stars seem to burn out fast.

I found that my new methods were working well. I decided to lift at 242 body weight just to get my fourth USPF Elite total. After that, I found a meet in Toledo and decided to try for my fifth Elite total at 275 body weight. The problem was that I could only weigh 234. Ten miles outside of Toledo, I started drinking Gatorades. Chuck Vogelpohl kept handing me can after can, but I was still 238 when I stepped on the scale. The official said, "You're good." But I said, "I'm lifting at 275." So I stayed and drank Gatorades until I went over the 242 limit and officially made the 275 class. I made my fifth Elite exactly where I made my first Elite. I squatted 800 lbs, benched 520, and did a 650 deadlift just to total that fifth Elite. By the way, they were all done with IPF or USPF judges. I was now wearing a bench shirt. They weren't much, a bit better than nothing. Shirts came about in 1984 or early 1985. I have lifted in every era of powerlifting. Things change and so must lifters.

I am one of a few to bench a top ten bench of 480 in 1980 without a shirt and sixth at 575 at a body weight of 220 in 2002 with a shirt at 54 years of age. Everyone asked me about Anthony Clark's benches. Were they good? I always said yes. Now, Gene Rychalk, Jr. is the center of controversy. I saw Gene from the head judges chair do a perfect 1005 bench. Letter perfect.

I'm sure if you threw some serious cash at Gene, he would shut the mouths of those who criticize him. My hat goes off to Gene just like Jim Williams, Mike McDonald, Ted Arcidi, Ken Lane, and all the other great lifters throughout the decades. Don't take powerlifting backward. It could end up like United States' weightlifting, whose road is a dead-end street. There are pretenders, but they know who they are. You must respect each other.

In 1970, I was weighing in, and George Crawford and Jerry Bell, the first 700 deadlifter at 165 body weight, were escorting a little kid at the meet. I asked, "Who's this?" Jerry replied, "This kid will be famous someday." His name was Bob Wahl, and he got a 661 squat at 148 body weight in 1983. To this day, I respect every lifter, young or old, who is brave enough to step on the platform.

My old friends Paul Sutphin, Mark Dimiduk, Jay Rosciglione, and many others like Steve Wilson and John Black of Black's Health World of Cleveland were all doing remarkable things. I lifted at the 1987 YMCA Nationals with 2033 at a light 242 and got fourth place. Steve Goggins was already a superstar, just like today. My good friend, Matt Dimel, had squatted 1010 at SHW and was totaling 2300. It was a great loss to Westside when Matt died. Gary Sanger was moving to LSU to teach, Bill Whitaker was going to Pennsylvania to start a vet clinic, and Dr

Tom Paulucci had some medical problems and had to retire. Doug Heath was going strong. Bob Coe, who showed up at my door 25 years ago, is still at Westside.

My knee had been hurting for some time, about five years to be exact. I was going to the APF Nationals and was taking a low hassock record when three-quarters of the way up, I snapped my left patella tendon in half. I had heard a few snaps but never thought I would hear my own. But it happened. My kneecap was now on the inside of my leg. The emergency squad showed up in ten minutes. They looked at my leg and told me they thought I had dislocated my knee. I told them no way jack. I am very allergic to anesthesia and I have a spinal block so I was awake during my surgery.

All went well, and 14 weeks later, I went back with my friend, Diane Black, to have the wires removed. They gave me a shot to calm me for surgery. That shot put me to sleep, and they proceeded to give me anesthesia. I stopped breathing for four minutes so they trached me and then inserted chest tubes when my lungs collapsed. I woke up two days later with holes in my chest and throat but no knee surgery!

WOW, that really helped! I didn't know that Dr. Howard and Dr. Fine were working on me. Well, they inserted an air tube through my nose and finished the job. After seven days in intensive care to do a four-hour procedure, I was home.

I was never going to compete again, but Kenny Patterson said something to me that brought me out of retirement immediately. That was 1996 and powerlifting hadn't gotten out of hand yet. I lifted seven times in 11 months and became the first over 50-year-old to bench 550 and the first to bench 600. This was in a closed-back shirt. I made a top ten bench again. I heard people say that I wasn't built to bench, squat, or deadlift. If I made top ten lifting all categories then almost anybody can. Except for you lazy bastards who have got some excuse why you can't!

Powerlifting comes in eras—no gear, some gear, better gear, and what I refer to as gangster gear, or legal through loopholes. Get used to it. It is here to stay. It makes relative newcomers superstars fast. Big squats, big benches, and most of the time, a poor deadlift! This shows the true strength of a person. The USPF was kicked out of the IPF. I told Peter Thorne that we should pull out of the IPF instead of getting pushed out. Remember folks, there are drug-tested meets but no drug-free meets. Get it straight because that is the way it is. Brother Bennett had a good idea, but unfortunately, there will always be those who bend the rules. This has been the way since the beginning of sports. There was the ADFPA and the USPF. Of course, both seemed power hungry so Ernie Frantz started the APF and the world body WPC. Until the USPF (before the IPF started), I had lifted AAU when the bench was performed first, then the squat, and then the deadlift. I believe it should still be that way, but we had to make concessions with England 30 years ago about, believe it or not, gear.

This is my point. I never made the rules, but I have always followed them. When I dropped out of the USPF, they sent a questionnaire out asking what I would change. It was a little late for that, and I never filled it out. I always wondered how I killed myself to make Elite totals, suffering injuries and thousands of hours in the gym, when a judge could simply study a book, take a test, and become an IPF judge in weeks and not be a class one lifter. Big men are hard to judge in the squat. You are penalized for not breaking parallel in the squat, which is very tough to do with the super strong suits we can wear by the rules. But in the bench, we are rewarded by one pound of 700 touching your chest. It doesn't make sense. But bench meets have become the thing. You see

countless bench pressers on the cover of *PLUSA*. I thought it was called *POWERLIFTING USA*, not *BENCH PRESSING USA*. It shows how popular bench pressing is.

Even at Westside where we push the squat, we have made only three all-time world records, with five over 1000. Matt Smith's 1124 is the highest, and we have ten 800 deadlifters. We have made over 20 all-time world bench records, 15 over 700, and one at 825. That shows what I know.

It's the year 2000, and I'm doing pretty well with an 860 squat at 242 and a 580 bench. I believe I was third with a 920 squat and fourth in a total with 2100 at 235 body weight. Now, the WPO is on the scene with some money. It's amazing how money can bring people together. Kieran Kidder has brought the best lifters together for the first time since Gus Rethwich's Hawaii Record Breaker meet, where unheard of weights were being lifted. The WPO format pits the greatest lifters in the top of each money division.

The 165s are unbelievable with Ron Palmer, who is fairly new to powerlifting, winning most of the time. But the kingpin in the 165s is Tony Conyers, with an 832 squat and a 1978 total. The guy must use mirrors. He's also one of the nicest guys you will ever meet. He's been at the top for years. My friend, Angelo Berardinelli, has also been at the top for years. He started at the famous Black's Health World. He's over 800 in the squat and 1900 in the total and still moving up. Angelo is a bulldog. Another young lion is Nick Hatch at 148. I saw him squat an unreal 788 at the ARNOLD CLASSIC at 19-years-old. He is out of Big Iron Rick Hussey's gym.

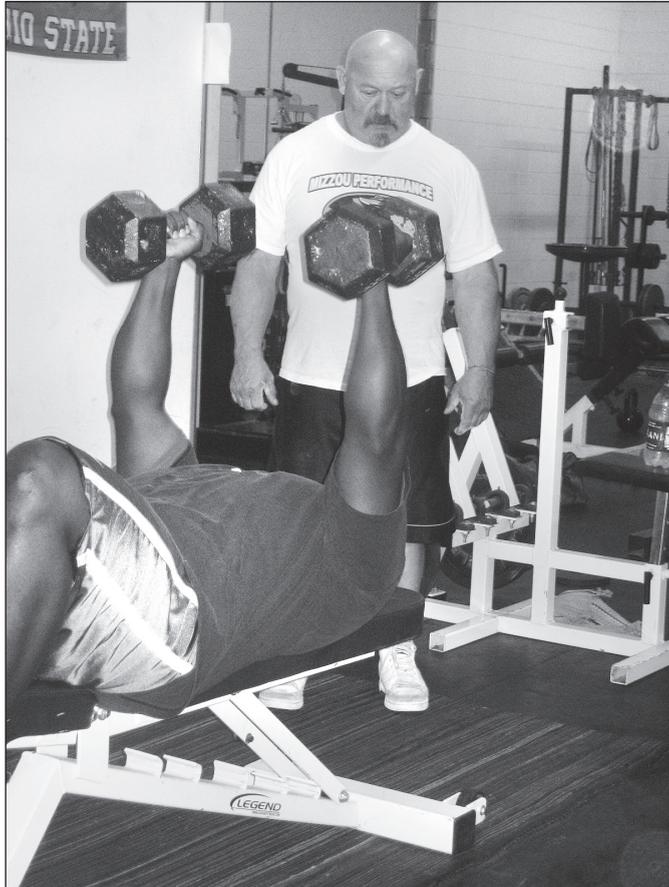
The second group is the 181 through 220. At the 181, our good friend, Arnold Coleman, broke Gene Bell's all-time total record of 2116. Maybe they will rename the meet the Arnold Coleman Classic. Phil Harrington was not at the WPO but squats 900 at 181. Where will it end?

Then there's new star, Mike Cartinian, who is aiming at Jesse Kellum's 198 total record. Mike trains with Angelo Berardinelli and Kenny Patterson. Speaking of Jesse, I think he's taking it easy back in the swamps of Louisiana training with some bad ass gators. I must say, Jesse is not only one of the strongest men in many weight classes but very smart about training. I think Jesse and Chuck Vogelpohl are twin brothers from different mothers.

At 220, Chuck Vogelpohl has owned the squat record at 1025 but has worn out his welcome at 220. Travis Mash has rose to the top at 220, breaking Eddie Coan's total record not once but twice.

The WPO has a 48-hour weigh in, which I have had doctors say is no advantage, but it sounds bad. But the 242 and 275 world record holder, Steve Goggins, only weighed 264 when he squatted 1102 and totaled 2535. He weighed light at 242 and totaled 2481 with a world record squat of 1043. Steve trains in Atlanta with Phil Harrington, the world record holder at 181 with an unreal 900 squat, and also John Groves, a veteran lifter who has been around a long time. It's important to have a group of strong experienced lifters. Not to be left out of this group is Kara Bohigian. She is extremely strong and very knowledgeable about training.

Mark "Spud" Bartley, who trained with Donny Thompson at Maximus Barbell in South Carolina, is really on the rise. At the 2005 WPO Super Open in Columbus, Ohio, he made a huge 2463 total and took second place. It proves a point that the most important thing in a gym is your training partners. You can tell who's got balls and who pretends to have a set. How? It takes guts to lift with the strongest men in the world. Kieran has assembled the strongest and summons them to one platform.



A few years ago, 2400 would have won the SHW class. Then it was 2500. Now Matt Smith made 2601 and only took third place. And let's not forget Gary Franks! He made the first 2500, 2600, 2700, and 2800. With Beau Moore, Andy Bolton and I hope for the return of Brent Mikesell, one of the best SHW squatters around, but Moore and Bolton could claim it soon.

Beau Moore and Tony Conyers bought a reverse hyper from us some time back and have made unbelievable progress ever since. Matt Smith wants me to repossess it from Beau, not for nonpayment but

because he's getting to be the strongest. All these men are gentlemen and have nothing but good things to say about the competition. It's always been that way with the strongest lifters. The strongest men never bad mouth a beginner or those who are not strong. However, nowadays, there are many on the web who are always being disrespectful to the strongest

men and women in the world. Why? What have they done? Oh yeah, nothing! These people are constantly on the web when the men who they are criticizing are training, writing articles, and doing seminars. They are also going to meets and cheering on their competition or are backstage helping to put on bench shirts or spotting someone's warm ups. No one in my humble opinion should belittle Andy Bolton's deadlift, Brett Mikesell's squat, Gene Rychak, Jr.'s bench press, or Gary Frank's total lifts.

Are they prepared to train beside men like these for even a year and see what they go through? Then and only then would someone appreciate the work and sacrifice that these guys make. My goal has been to share what I have been taught and what I teach through my videos and seminars. In addition, my goal has been to share the work of my friends such as college and NFL strength coach, Buddy Morris; college and NFL player and now coach, Tommy Myslinski; and my friends and training partners Dave Tate, Jim Wendler, George Halbert, and now Chuck Vogelpohl. All of them are giving back to their sport by giving their time to help lifters and coaches alike learn a similar system that works for everyone.

After moving to Columbus and training at Westside, Dave started Elite Fitness Systems. He is now not only my training partner, but we compete every day in the gym. We are in competition in business with internet sales on my web site, www.westside-barbell.com.

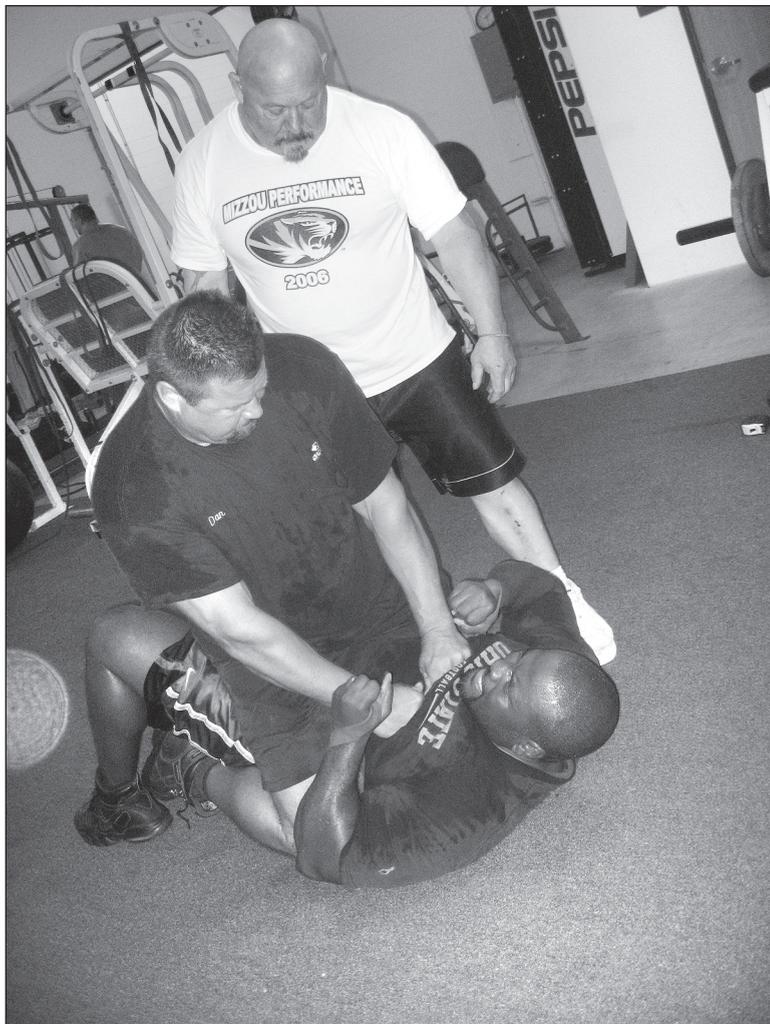
I can't forget Paul Childers, who performs in my workout tapes. He has contributed much to Westside Barbell from his own experiences with the Westside system. Also, my Finnish friend, Sakari Selkainaho, has helped elevate the system. I want to thank my training partners most of all, but I can't thank everyone or mention their names. There are just too many. But you know

who you are—my friends from the Ukraine, Finland, Brazil, Japan, Ireland, Germany, Australia, New Zealand, South Africa, Canada, and everywhere else. All NFL players, track athletes, MMA fighters, the late Dr. Mel Siff, and all the old Soviet Union authors who brought my attention to an advanced and sophisticated training system. Pavel, the kettlebell master, who has backed us for years. I back him and his team of instructors for their relentless teaching.

Powerlifters, please band together. I respect all federations, their motives, and the direction they're heading, but we must travel together to achieve true success. I would like to thank the three Westside Barbell team doctors who work relentlessly to keep us healthy—Dr. Dave Beversdorf, Dr. Bill Nucklos, and Dr. Eric Serrano. With three more surgeries under my belt, powerlifting is about to pull me down, maybe for the last Time. However, as a man once wrote, I won't go slowly into the night, but I will rage on into the dying of the light.

Did you know that Westside has only two men on its staff: John "Chester" Stafford and Matt Wenning? John talks about nutrition on his website. I believe he has the biggest push-pull for a 275 pounder. He also has a 733 bench, an 832 deadlift, and a 2502 total. Matt Wenning is a graduate of Ball State University with a master's degree in biomechanics. He has already made a 1050 squat, a 650 bench, and a 770 deadlift at 275. These two people, along with me, are the only qualified people to talk about the real truth of what goes on at Westside.

We see the evolution of strength training every day, and every day it changes for the better for



our lifters. If you follow our articles and talk to me occasionally, you know that the experiments we conduct are performed on our top men at two or three major meets to prove that the tested methods work. I don't write B.S. I write about what I see at Westside. Some things work and some don't. We put forth a lot of effort to help our lifters and I hope yours. I appreciate how cooperative our lifters are, young and old, and how loyal they are. Some have been here for years. Bob Coe has been here over 20 years, and Chuck Vogelpohl, Amy Weisberger, and Jimmy Richie have been here for 20 years. Did you know that Westside contributes to the development of many sports?

A former top soccer player from Manchester United stayed at Westside for more than a month to learn our system. After returning home, Ben Plevy opened up a training facility to pass on the system to young athletes in his home country. Four rugby coaches

from all over the world spent considerable time at Westside, and the results have been quite favorable to say the least. Many professional football players come to Westside and have made great strides. Did you know that the football players never ask me to make them faster but to make them stronger? Making them stronger makes them faster. Also, many major universities have adapted the Westside system to fit their needs.

There would not be a Westside if not for the likes of Huge Iron, Donny Thompson, Spud Barclay, Paul Childress, Andy Bolton (with his 1003 deadlift), and Jeff Lewis (with his 1200 plus squat). Because of them and many like them, we never miss a workout for fear that some of you dudes are working on a secret of your own.

I am proud to be associated with powerlifting, and I hope you are too.

FOREWORD FROM THE EDITOR

I have been involved with weight training since my early teens. Now, after more than 30 years, I have learned a lot about the great sport of powerlifting and strength training.

I have always tried to get my hands on any type of training information that I could. I read books, watched DVDs, and talked to lifters. Today, email and instant messenger helps a lot. Many top lifters are easy to approach and will offer their advice and opinions. I think that's unique to powerlifting. In my rank, one source of information is above all others. Louie Simmons has helped me greatly, as he has helped so many other lifters and coaches regardless of sport or federation. No one, even Louie don't more than all others together, but he will teach you to think.

I first trained using the Westside method back in 1996, and my bench jumped 17.5 kilos (38 lbs) in six months. That convinced me. Before that, I would try anything I could get my hands on. Russian- and Bulgarian-based training routines gave me the best results, but nothing beat Westside, especially because the results are measured by long-term progress. Both systems are still utilized in Westside training.

Today, Westside training has introduced many new techniques and methods in strength training. The most important is the conjugate method, which is what the entire system is built on. The methods and exercises utilized by Westside, such as squatting with a box and utilizing bands, are now used worldwide.

The Westside system uses many principles that were developed many decades ago. Those principles still stand today. Many times people don't understand the idea of Westside. Reading one article or even ten may not clear the picture.

This book is based on Louie's articles over the years. You will notice changes and differences in percents and some other things while others have stayed the same. The main purpose is to outline the information so that the system is easier to figure out. You can study the theory behind the methods or just learn how to bench press. This book is meant for coaches and lifters and will teach you to analyze training so that you can coach yourself and others.

I want to thank Louie for being such a great friend and for his patience and trust on this project. We all know he reads a lot, and it's about time for him to have a book of his own!

Sakari Selkainaho

WESTSIDE STRENGTH TRAINING FUNDAMENTALS

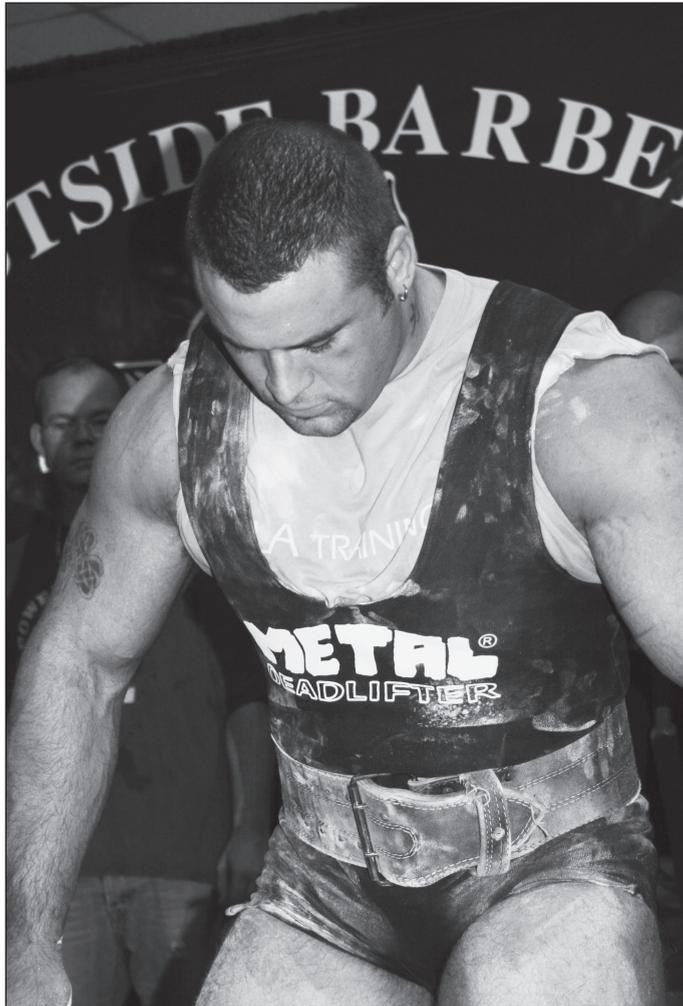
World of Strength and Power

In Bulgaria where many of the greatest lifters come from, the system is straightforward. Anyone who wants to reach the top (juniors and seniors) must go through the main training facility. They do few exercises. One must be ideally built to succeed and have a particular body structure and muscle type. One must also possess a high work capacity with near limit weights. They use as many as six training sessions per day. This was a proven system and was used for more than 20 years. Only the strongest survived. This system produced high results as well as a high burn-out ratio.

Bulgaria is a small country and is economically depressed. Sport was a way out of poverty. This meant that everyone tried his best for himself and his country. For every lifter who makes it, many go back home denied entrance. The Bulgarian training system was designed to produce one goal—an Olympic medal run. They succeeded through the process of selection of body structure to progress with a small number of exercises including the snatch, clean and jerk, power snatch, power clean and jerk, and front and back squats. The athletes had to have the ability to lift maximum weight in more than one workout a day with a 30-minute break between workouts. They had to be able to do the second workout with less time on warm ups. The junior and senior teams trained together. There had to be top coaches. Normally, there were three involved with the top 20 lifters.

Their national coach was Ivan Abadjiev. Because he was the top coach, little variation in the system occurred. Another super power was the former Soviet Union. Their system was very thought out. They sought to develop top lifters with an assortment of means. The former Soviet system was vast, consisting of many thousands of lifters and a large number of coaches, many former highly ranked lifters. With so many coaches, many combinations of training evolved consisting of different loading schemes, exercises, tapering methods, and restoration. Because of the many types of body structures, it became clear that the same exercises would not work for everyone. In 1972, the Dynamo Club experimented with a system of exercises that were constantly revolved. A group of 72 lifters, all masters or international masters of sport, used 20–45 different exercises. At the end of the experiment, only one lifter was satisfied with the number of exercises. The rest wanted more. This was the conjugate method. Much research was brought to the United States after the fall of the Iron Curtain.

Do you know who the first Soviets were to participate in the Olympics? They were not



sportsmen but camera men and biomechanics experts and coaches. They studied the best athletes from all over the world and at first copied them. Later, however, they introduced new innovations in training. This is exactly what Westside has done. They had so much training data that many of their own coaches could not access it all. Nevertheless, they had hard proof of what works and what doesn't. Many of their coaches were top lifters, training along with other lifters. The very best were on the national or military teams. They were proud of their heritage and defended it fiercely. Their training methods spread to other communist countries. They had templates to examine the strength and weaknesses of all athletes. Here is an example for a 110-kg lifter (from *Weight Lifting Fitness for All Sports*). To be superior, a 110 kg (242) had to be capable of the following—power snatch 396 lbs, power clean 484 lbs, front squat 573 lbs, back squat 639 lbs, and close-grip bench 418 lbs. Does the U.S. weightlifting team do this? Hell, no. This can be the difference between progression and regression.

I have used the methods of many Russians. I have thanked some of them before, but can't possibly thank all of them or mention all their names. But here are some of them. V. Zatsiorsky's book, *Science and Practice of Strength Training*, confirms that Westside is on the right track. YV Verkhoshansky was the father of the shock system of training. AS Medvedyev, with his insight into training and restoration, brought my attention to the importance of changing volume and intensity during different phases of training. AS Prilepin's research in determining the optimal training loads by intensity zone and number of lifts per workout is the foundation of training at Westside.

Another super power is the Chinese. They have made great strides in all sports, but weightlifting is in the forefront. The Chinese have always been proficient in weightlifting. They have thousands of candidates to choose from. They have always led the way in acupuncture, acupressure, Tai Chi, and meditative methods. Their system was strengthened by adding former Soviet coaches. They have raised high volume training to new heights. In a video filmed in a world championship training hall, I saw a 14-year-old boy squat 370, snatch grip deadlift 330, and clean and jerk 242. This was at a body weight of 110 lbs!

The Chinese select a group of lifters whose body can withstand the maximum loads required to reach the Olympics. They have barracks after barracks of lifters to choose from. It's a way out of poverty. They pick the best coaches and then assemble the best lifters. They already had perhaps

the best psychological and physiological methods. Add all this up and you have a juggernaut. It's quite simple really. They break training down into separate units to make a whole. This is an example of the conjugate method. In addition to the Russian method, now we have the Chinese method to learn from. But will we?

With similar methods taught by the Russian coaches but with a higher work capacity, there seems to be no limit. I have talked about three powerhouse countries. What about the fourth—Westside Barbell? Many people compare the world's best lifters to ours. Some say, "Hey, Louie, those Russian lifters are some of the greatest and they don't follow your methods." They also bring up names such as Ed Coan, Steve Goggins, Beca Swanson, and Gary Frank, who is the strongest man I've ever seen. They say, "Why don't your guys squat as much as Brent Mikesell or bench like Gene Rychlak? And what about Andy Bolton's deadlift?" Well, these lifters are spectacular to say the least, and they have my admiration and respect. They make a lift that seems unbreakable but then manage to break it. But nowhere else is there a stronger collection of lifters than at Westside.

Our top six guys rival those from any other nation. Take a look at the Westside all-time ranking lists and clubs later in this book. The best totals and lifts are mostly made within the last 12 months. In addition, we have more back up than an NWA concert. Amy Weisberger has more than ten times her body weight total at 132.

We had the youngest 700 bencher, Kenny Patterson, at 22-years-old in 1995. In his time, Kenny was also the lightest to bench 700 (701) at 238. Back in 1995, we had three teens bench over 600. Anthony Clark was the first to bench 600 as a teen. Then it was Westside's Andre Henry (605), Tim Harrold (615), and Mike Brown, who as of April made 670 easily at barely 19-years-old. At the same meet, JL Holdsworth made 775 at 284, and another lifter, Paul Keys, who may not be so familiar, hit 750 at 286. The last two hit 800 on third attempts but got them turned down. At the time of this writing, Tim Harrold became the youngest man at 20-years-old (2/4/84) to bench 700 and the youngest to total 2400.

No gym has totals like Westside. We have had four men break the all-time bench record—Doug Heath, Kenn Patterson, George Halbert, and Rob Fusner. These men have accumulated 20 all-time records. A few years ago, we dropped the 500 bench club at Westside. We felt that having 63 members on the list over the years took some luster off it. So now we calculate only 550 and up. We have 43 on this list. Chuck Vogelpohl is the lightest lifter to squat 1000. At 220 body weight, he has made 1025. His best lifts add up to 2419.

I wrote this book for all of you. As Roy Jones, Jr. says, in case you forgot, take a look at the Westside record lists and clubs. Some of our own lifters don't know our history, and I just wanted to inform our fans and anyone else who would listen.

The Organization of Training

When planning training, one must not plan for the next meet but rather the next year or even longer. The effectiveness of your training is based on many considerations. The following are some issues to consider:

- Weight gain or loss
- Improving form on competitive lifts or special exercises
- Raising work capacity and improving general fitness
- Gaining general training knowledge
- Testing character and courage
- Learning how to use legal equipment

Weight gain or loss:

First, you must be in the correct weight class. If you are six feet tall and weigh 180 lbs, you need to gain weight. A lifter like this should increase his protein and calorie intake, or he cannot compete with the top 181s of the world. To solve the problem, on max effort day do max 3s up to max 6s. This will build extra muscle mass while also building absolute strength. At Westside, we recommend doing only a total of four exercises per workout. To gain weight, add two exercises to add muscle mass. When you gain up to the proper weight class, drop back to the original four exercises not counting abs. As far as food intake, skip the chocolate milk and cookies and learn about proper nutrition. Buy a book or two and read and learn. You have gained too much if your deadlift goes backward. Your waistline will get too big, and your hands will get too fat. I know. It happened to me. You must be disciplined. It might take five years of hard training to build your self up to the right weight class.

Improving form:

Improving form is a necessity, but it is sometimes difficult. At Westside, we have people who are very good in all lifts. To teach a new lifter, we place them in one of our groups. By interacting with that group, they are taught good form through watching and listening. We never criticize but rather analyze. We always tell the truth to each other, especially visitors because many of them don't have the luxury of great training partners to watch over them. Special exercises will play a large role in perfecting top form in all three lifts by doing exercises for whatever muscle group is lagging. This in itself will help perfect your form. It only stands to reason if you have a weakness in a muscle group, it can destroy your form. A word of caution: If you are starting out, start out right. Matt Dimel always had a triceps problem. But year after year, he would gain little by little and his poorest lift, the bench press, would increase. After rupturing both patella tendons, he eventually won the APF Seniors again. His improved bench press helped. A champion will become a champion by becoming better at his worst lift.

Raising work capacity and general fitness:

Why is this so important? First, we all need to work on our weaknesses. Sometimes it is the ability to train at a fast pace. During a workout, your energy level can drop quickly. Some experts say within 45 minutes. Therefore, one must train at a fast pace to ensure that the most important work is completed in 45 minutes. This involves lactic acid tolerance training. That is, while training, a pump in the hips and lower back will occur while squatting and doing back work. To think that one must fully rest between sets is old thinking to say the least. If you do a work task and fully recover and then repeat the same work, you will use the very same muscle fiber. You gain nothing by training this way. But, by enlisting shorter and shorter rest intervals between

work sets (i.e. the interval method), the work will be far more intense involving more muscle fiber. You will find that the last half of your speed sets will be more explosive of all. When lactic acid is produced, so is the growth hormone. If you have a high work capacity, a high volume, high intensity workout is not as tiring for you as it would be for someone out of shape. This enables you to train a little heavier and longer and a little faster than your enemies. This requires one to do small, roughly 20-minute workouts during the week. The workouts are directed toward any particular weakness you have. It could be a muscle group, flexibility, conditioning, or even concentration. It may take years to raise general fitness to a high degree. A lifter's goal should be to raise his classification ranking from class four to USPF standard Elite.

At Westside, we have developed 56 Elite lifters, who started out with nothing. Some have achieved all-time record performances such as Chuck Vogelpohl, Kenny Patterson, and Rob Fusner to mention a few. They continually raised their work capacity. As they became stronger, their ability to recuperate, perfect form, concentrate, and raise volume increased. Chuck and I do about 14 workouts a week. We will do a couple sets of dumbbell presses to failure or timed sets with some lat and ab work before squatting. We may do sled work and glute ham raises before a bench workout. You can even do sled work or the reverse hyper machine before a squat or deadlift workout with no adverse effects when you are in top condition. By doing a lot of sled work of all types your work capacity will greatly improve.

On max effort day, the heaviest sled work is performed. It may involve pulling up to six, 45-lb plates on a flat, steel sled. The sled is pulled in two ways—with the strap hooked to the back of your belt or holding the strap in your hands between your legs with an upright posture and



your arms straight. The amount of weight is reduced throughout the week until possibly a weight of roughly 60 lbs is used. The weight is lowered, but the length of pulling is greater—600 feet for the heaviest work and up to 2000 feet for light work. For upper body work, I have dragged for two miles nonstop. I sometimes do a lot of box jumps as a replacement for some of the sled pulling. Light fireman's carries can also be done. We throw a medicine ball for a set time, usually 3–15 minutes with a ball weighing 10–40 lbs. Light power cleans are also very beneficial for conditioning. Do them in one of two ways. First, drop to a hang clean and do power cleans with the interval method. A set can be done every 60, 45, or 30 seconds depending on your level of fitness.

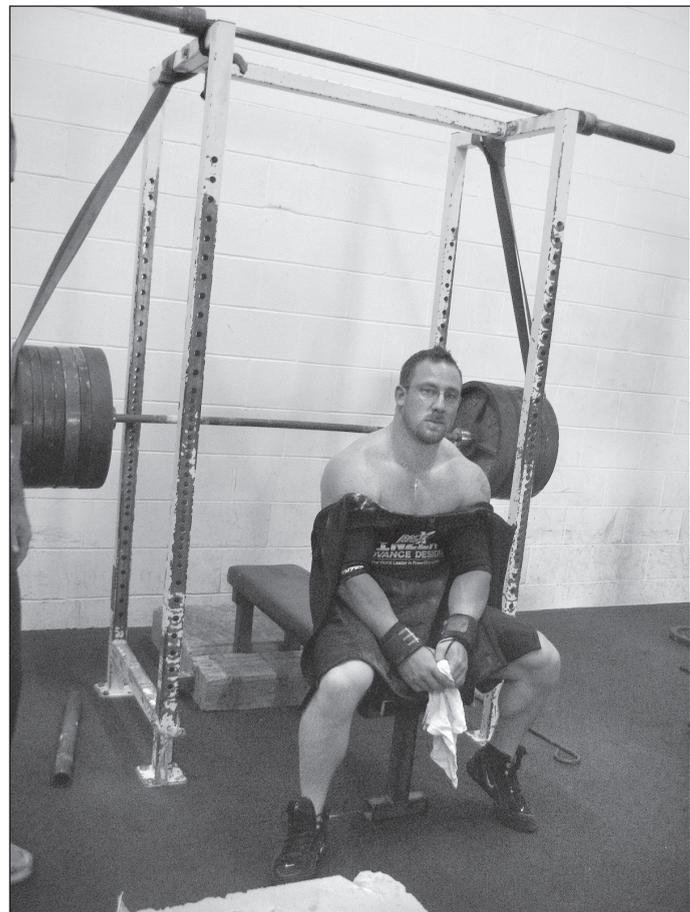
A second variety is to add a push jerk or push press with each set. The sets should last 5–20 minutes. This is a tough one. Dumbbells can be done in a very slow fashion for up

to eight minutes. Use the shortest time, two minutes, with the heaviest bells. For example, use 50-lb dumbbells continuously for five minutes keeping track of the reps. Walking lunges can also be done. But whatever exercise you do, it should slowly increase in intensity and volume as the years pass. Ease into the work but always aim to increase the amount of work. The better condition you're in, the faster your new records will come. There is much to learn if you are to succeed, and it takes time. You must gain mentally, technically, and physically. So be patient. It will come.

Testing character and courage:

I am a huge fan of most sports, but when I watch basketball, I frequently hear the announcer say the player passed up an open shot to another player because he did not have the confidence to shoot the ball himself. Or during a football game, the announcer will say that a certain player is a natural leader. So what are the other ten players? Natural-born followers? I hope not, but who knows? Why can't the other ten teammates step up and take over? Angelo Berardinelli said it best: "They are two types of people—the prey and the predator." Which are you? And don't stroke your ego. I watched Angelo try to break the world middle-weight squat record for years. He was always close but was never able to break it. The record kept going up from 766 to 771 to 773. Finally, at the WPO in York, Pennsylvania, in June 2002 he made 777. Now, Angelo has that world record, and he dares anyone to take it away from him. The top middle-weights this year are all predators. When I hear someone tell me what place he got in a meet rather than what his numbers were or if he got a personal record, I know his ego will hold him back. The real contest is with yourself. A trophy proves only what you have done but has no bearing on what will happen next. You must always do better and better. That's the real world. You can be the greatest powerlifter in the world, but the day you retire, you're forgotten. If you quit one time, you're a quitter. You may go for a year or two without progress before coming out of a slump. Training knowledge as well as technology will make it possible to make progress for a very long time if you want to. Powerlifting is a tough sport. No one said it wasn't. As far as training partners go, if you run with the lame, you will develop a limp. So only train with those who have the same goals as your own. Everyone can't be a world champ, but we all can be better.

At Westside, we have many in-house contests mostly on max effort day. They can happen without notice, and most often, that's the case. I recall pulling a heavy sled on a



Monday a few years ago. I was minding my own business when Chuck Vogelpoh yelled out the door, “Get your old ass in here. We’re going to have a deadlift contest off pin one in the power rack.” Well, I was dead tired from pulling the sled, but someone was running their mouth as usual. Now, I was being pulled into a contest on something I had not broken a PR in 15 years. But I obligated to take part, and somehow I broke my record. How? I guess I was so pissed off at those nitwits that the only way I could get even was to get a PR. When I lose, I use my age (54) as an excuse. But if I win, I rub it in. It’s been said show me a good loser and I’ll show you a loser. Thank goodness we have some very bad losers at Westside.

If someone refuses to engage in a spontaneous contest, we will throw challenges at him when he least expects it. If someone regularly backs out, we boot him out of the club. We know by experience that if a lifter will not take a challenge in friendly surroundings, he will fall apart in a real meet. Our training in general is designed to build confidence year round by doing so many different exercises. We are always breaking records. Remember, you must raise your mental and emotional limits as well or you won’t raise your weights. It may take years to learn to focus on training let alone meets. Some of us are late bloomers while others start fast but fade just as fast. Many times the brighter star burns out the fastest. Westside loves to see successful teams like Donny Thompson’s Maximus team rise fast. The LA Lifting Club is moving up fast as well thanks to Joe’s pushing and pulling with the help of his wife, Nance. And there’s my Finnish friend, Sakari Selkainaho, who lifts and coaches his teammates Jarmo, Ano, Mikko, and the rest. I love to see teams or individuals gaining momentum to see how the guys at Westside react to it.

Just remember, if you’re a betting man and two lifters are coming out to squat and one’s psyching up to DMX and the other one is listening to Patsy Cline’s “I Fall to Pieces”, which one are you going to put your money on? Why do some lifters put limitations on themselves? What I’m talking about is all the “world champs” and “world record holders” I talk to every day. Now, wait a minute. There’s only one world record in each lifting category and one world champ per weight class. That person holds the biggest total of the present year or of all-time in his weight class. Yes, I’m talking to you master and teen lifters. You may think I’m an asshole for saying this, but you are selling yourself short, my man. If you get in a fight and you’re a master, do you get to throw the first three punches? Hell, no. When there’s a hottie in the lounge, us old guys are always hitting on the young babes, right? So why limit yourself by age? Just do the best you can, and you are a champ.



Using equipment:

For example, why don’t all federations use monolifts? Or a bar for each event? Not only is it stupid not to do so, it is dangerous. Don’t be stuck in the past. If NASCAR kept the same pace as powerlifting, the cars would be much slower because of tire restrictions and other safety factors. How many times do you have to walk out before disaster strikes someone? Some federations are held together by one or two great lifters. Please don’t get

them hurt because your backward thinking has you on the verge of extinction. Just look at your membership totals slipping lower and lower. If there's only one top 100 list, make all things equal—suits, shirts, weigh ins, etc. It's not the gear, drugs, or equipment that makes the list. But as Vince McMahon says, "It's the size of your grapefruits." You are paying card members so speak up. Take control of your own destiny.

Gaining general training knowledge:

I hate to say this, but at Westside, we have lifters who don't even read *Powerlifting USA* let alone some of the books I frequently mention such as those I'm about to describe. Michael Yessis published *The Soviet Sports Review*. There was some valuable information in those articles translated from mostly Russian sports scientists in a quarterly magazine. It covered many sports but was invaluable to me at the time. The first book that made me a believer was *The Managing of the Weight Lifter* by Laputin and Oleshko. In this book, they showed a table that explained how to regulate volume by intensity zones. The writings of Verkhoshansky such as *Fundamentals of Special Strength Training in Sports* and many more including *Supertraining* by Mel Siff are valuable books. A highly respected author is AS Medvedyev, who wrote *A Program of Multi-year Training in Weightlifting*. Of course, there are several other highly accomplished authors including PV Komi, Thomas Kurz, Tamas Ajan, and Tudor Bompa. Lazar Baroga's book *Weightlifting Fitness for All Sports* is a must read. Zatsiorsky is particularly valuable to anyone who participates in sports or weightlifting. Try *Science and Practice of Strength Training* for one. I also enjoy Starzynski and Sozanski for information on explosive power training and Pavel Tsatsouline for stretching and ab work. Without these men who have dedicated their lives to the promotion of sports science used in a practical environment, I would have ended my lifting career in 1983. The results worldwide speak for themselves. I wish I could thank each of these men personally. Thank goodness I have the opportunity to speak with Dr. Siff and participate in a few seminars with him so I can play a small role in the development of others.

The Regulation of Training

One must consider how many lifts to do in one particular workout and calculate what percent is best used for explosive and accelerating strength. It is also important to establish the number of lifts for the development of your absolute strength. This is a major factor if you want to reach your top potential.

Also keep in mind all the components of training—physical, technical, and psychological. If training is regulated correctly, then all of the above can be accomplished while increasing hypertrophy and building general physical preparedness (GPP). This can be done at one time without the use of periodization where one breaks up the training into different phases every 3–4 weeks. By closely following the rep/set recommendations of AS Prilepin, here at Westside we have had 18 lifters bench 550 or better. This method is commonly known as the dynamic method. We use 60% of a no-shirt best bench for 8–10 sets of three reps. This is how speed-strength is best developed. Siff and Verkhoshansky used a force plate machine to determine the maximum effort a highly skilled weight lifter could display. This lifter generated 264 lbs of force on a 154-lb bar. The 154 is 58% of 264. This demonstrates the optimal relationship between force and

velocity where speed-strength is best developed. For the bench, we do roughly 120 lifts at 60% of a no-shirt max in a one-month time period (ten sets of three reps equals 30 lifts per workout times four workouts) for the development of starting and accelerating strength. By using a weight that is 60% of a one rep max, a 600-lb bencher can train along with a 400-lb bencher without one overloading or one underloading. How? The 600-lb bencher would use 360 for his sets, and the 400-lb bencher would use 240 for his sets. The workload is regulated to one's strength limits. If the 400-lb bencher uses more than 240, his bar speed is compromised, thus destroying the optimal relationship between force and velocity.

You may ask, how does a 400-lb bencher eventually bench 600? The answer lies in the improvement in and development of special exercises. When the 400-lb bencher has brought up his extensions, delt raises, and back and lat work to that of a 600-lb bencher, he has grown to be a 600-lb bencher as well. The bench press itself is not used for muscle hypertrophy (growth). The special exercises serve two critical purposes—the development of strength in individual muscle groups and an increase in muscular size, which helps increase leverage in the bench and squat. Prilepin's recommendations for weights above 90% (done on the max effort day) are 4–10 lifts. Here, we are referring to classical lifts or major bar exercises such as good mornings, box or rack pulls, and of course, a variety of squats.

Prilepin's Table: Number of reps for percentage training

Percent	Reps per set	Optimal	Range
55–65	3–6	24	18–30
70–75	3–6	18	12–24
80–85	2–4	15	10–20
above 90	1–2	7	4–10

Like Medvedyev and other sports scientists, we have discovered that too many weights above 90% will cause deterioration in coordination, which causes deterioration in form. When training with weights that are over 90% of your current one rep max for 4–5 weeks, negative effects occur to the central nervous system (CNS) and your progress will decrease. Yet, one must train with very heavy weights to make gains in absolute strength. So what's the answer? Train a bar exercise for only two weeks and switch. For example, do bent over good mornings for two weeks, safety power squat bar for two weeks, rack pulls for two weeks, and front squats for two weeks. These are just a few exercises to choose from. Always max out on this day for one rep in squatting exercises or pulls, such as rack pulls, high pulls, pulls off a box, snatches, or cleans. Do a three rep max in good mornings. The max effort day occurs three days after the dynamic day.

We have adjusted the number of 90% and above lifts in one workout to 3–5 lifts. The reasoning behind this is that the special exercises for powerlifting are much heavier compared to the Olympic lifts that Prilepin's data were based on. To become very strong, many lifts must be performed in limited movement exercises such as board presses for bench pressing, rack pulls for the deadlift, and above parallel box squatting for the squat. We have discovered it is best to do a single in most cases instead of a triple. Why? A 500-lb single equals 500 lbs of work. A 500 triple is 1500 lbs of work, which is much too demanding on the CNS. However, three reps will produce

muscle tension. It is advised that the more massive lifters do 3s instead of 1s to achieve adequate muscle tension. Extra body mass can reduce the range of motion in many lifters. We usually do a 90% weight as a last warm up and then hopefully a record over 100%, possibly two or three PRs. We invariably go until we miss a weight. This is the best way to achieve a true max effort.

Let's look at the ratio of the dynamic day to the max effort day. Dynamic day—120 lifts per month. Max effort day—12–20 lifts per month. This is how we are able to train heavy throughout the year—by rotating exercises on max effort day.

Remember, do one type of training per workout day: speed bench, Sunday; speed squat, Friday; max effort for bench, Wednesday; and max effort for squat and deadlift, Monday (the exercises for the squat and deadlift are the same). You can't and should never do two types of strength training in one workout. Your brain will not know what to do when asked to do two completely different tasks in one training session.

This can be best illustrated by watching a professional boxing match. In the early rounds, up to six, is when most knockouts occur. This is where explosive strength is demonstrated. Endurance plays little role in the early rounds. But after six rounds, the explosive strength diminishes, strength endurance is dominant, and fewer knockouts occur. Not only is it best to do only one type of special strength training per session, but while doing the dynamic method using only one weight (after a warm up), your CNS can accommodate the task it is asked to perform.

To summarize, change the core exercise on max effort day every week. Use 3–5 special exercises to complement your core exercise. Train speed bench press at 45–50% of your max



bench without a shirt. Train speed squat in waves of 50–60%, jumping 2.5% each week and then start over with 50%. The box squats on dynamic day are done with a pair of groove briefs or a suit with the straps down. Never wear knee wraps but wear a belt.

As you can see, speed work is done on one day and max effort work is done on another, 72 hours apart. Friday is our speed day, and Monday is our max effort day. Speed day is designed for explosive strength and acceleration for the development of force. Max effort day develops absolute strength. Chuck Vogelpohl, who has won everything from the Y Nationals to the worlds, simply says it is most important to push up the special work and concentrate on bar speed for squatting and deadlifting. Just remember to push the special core exercises that work best for you closest to the meet.

For the bench press, two workouts are done per week—one for speed and acceleration and one for the development of reversal

strength. Yes, reversal strength can be stored for the pause rule. Sunday is the dynamic method day. Always train at 60% of a no-shirt max (240 for a 400-lb bench, 270 for a 450 bench, 300 for a 500 bench, and so on). We don't wave the weights in the bench. We always train at 60%, 8–10 sets of three reps. Use close and moderately close grips, with your little finger inside the narrow rings on the bar. Lower the bar as quickly as possible. Reverse it as quickly as possible and accelerate to lockout. Always use chains or light flex bands on these sets. After the 8–10 sets, train the triceps very hard. Attempt new records in a bar or dumbbell extension. JM presses or any other triceps exercise will do fine. Triceps are most important. Lats are next, followed by delt raises, upper back, and forearms. All this should be done in less than an hour.

Three days later, Wednesday, is max effort day. On max effort day, you must max out (but not in a regular squat, bench, or deadlift). Do a one or three rep max in exercises such as the board press, floor press, incline, decline, or seated press, or rack lockouts. You can have records with added chains or bands. Make as many combinations as possible. This is known as the conjugate method. When one trains a particular exercise maximally for even three weeks in a row, growth hormone production is greatly reduced. That is why you must use special core exercises and rotate them every two weeks. Sometimes we even modify a special core exercise slightly each week.

Remember to pursue greater bar speed in all lifts. Push up special exercises and rotate as often as necessary to maintain progress. Stay with short rest periods on dynamic day. For squats, rest 45 seconds and for the bench, rest one minute. Any faster and the CNS may be negatively affected. The short rest between sets causes lactic acid to accumulate. By working through the lactic acid, growth hormone production increases greatly. So don't be a wimp. This pain pays. Don't take openers. If you are worried about your opener, what are you going to do with your second and third attempts? Pick the exercises that work best for you closest to meet time.

Percent Training

In the squat, what is too heavy to train with and too light to train with? In Russia, much research revealed that 65–82.5% of a one rep max is best to build strength in the squat. They suggest 2–6 reps per set. At Westside Barbell, we do sets of two for two important reasons. One reason is that more than two reps tends to cause bicipital tendonitis and shoulder discomfort. This pain is commonly felt while benching but, in fact, comes from squatting. The bar shifts to some degree, causing damage. Having your hands spaced too close on the bar may also be the culprit. The second reason is that in a power meet, we don't do reps. So if we do 12 sets of two reps, we are getting 12 first reps per workout. If you do four sets of six reps, then you get only four first reps.

The velocity-force curve shows that weights can actually move too quickly or too slowly. By staying within this percent range, we are continuously working with poundages that provide both adequate velocity and force to produce record breaking squats. The multi-set system with submaximal weights is referred to as the dynamic method. It produces maximum explosive force as well as maximum velocity. It is one thing to be quite strong and quite another thing to display it. This is important to sports teams if the weight room is to be compatible with the sport.

Let me clarify one important aspect of our training. On our squat/deadlift special exercise day we train with a revolving system of exercises that are switched every two weeks. We will work up

to a top single (100% +) in a particular lift such as the box squat below or above parallel with the safety squat bar. After breaking a record or two, we switch to rack pulls. By continually revolving special exercises and training at 100% +, we apply max force throughout the cycle. So, as you can see, we have a velocity day and a max force day in the same week. This max force day is referred to as the maximum effort day. This enables us to maintain both maximum force and maximum velocity at the same time. We are able to train heavier longer than with any other system. The volume of weights by percent will make you stronger throughout the year.

By training the squat with sub-maximal weights with maximal velocity and by rotating exercises that closely resemble the squat on a second day, you can stay within the boundaries of the force-velocity curve. When you rotate special exercises such as good mornings, rack pulls, or Manta Ray squats, you eliminate anxiety and high blood pressure, which accompany the competition and are present when trying heavy training weights in the squat. For most, training with heavy weights in the squat can be so stressful that one's adrenaline level drops drastically. Another negative aspect of progressive overload is that you must always drop assistance work at the end of the cycle even though these are the exercises that made you strong in the first place. When you stop doing special exercises, their effect is lost in a few weeks and sometimes in a few days. So for the most part, they must be maintained as close to the contest time as possible. Large muscle groups recover in roughly 72 hours and small muscles in 24 hours.

We do our heavy squat and deadlift work on Monday. It never has a negative effect on our Friday squat workout. Therefore, there is no reason to reduce the work done on Monday when the contest is, in fact, a day or two later than our regular squat day. As far as deadlifting goes, we seldom do it. But when we do, we do multiple singles with very short rest periods (30 seconds). We start with 60% for 15 singles. During the mini-cycle, the number of lifts decreases as the percentage increases. Use only one weight per workout. The top percent is roughly 85%, and the lifts are reduced to 6–8 singles. If you do this type of training, jump about 5% a week. I recommend that only lifters built to deadlift do this cycle. You must be very explosive on each lift.

For example, if you pull a max 700 lbs and are using 70%, or 490, you must exert 700 lbs or more of force when pulling the weight. Yes, with sub-maximal weight you can exert more force than is actually on the bar. This is not possible when you do a max triple of 670 when your max is 700. If there was a force meter on the bar with 670, it may surprise you that not one rep would equal 700 lbs. This also explains why a particular lifter can perform two reps with 800, yet can do only 800 at a contest. His body can maintain 800 lbs of force for a period that allows two reps. However, because of the slow bar movement, there is a lack of adequate velocity to lift the additional 30–40 lbs on the bar at the meet. Box squatting on squat day works because of the velocity day for the deadlift. On deadlift day, we do a combination of max singles and max reps on a variety of exercises such as four types of good mornings, five types of squats, five methods of pulls, and an array of exercises for the low back and abs. We may also do static work and isokinetic work. Special exercises with special devices allow maximum speed at the beginning of the lift and maximum overload at the top portion.

When using percent training, one can control volume, keeping it constant throughout the yearly cycle. Speed work and maximum weight can be incorporated into the workout unlike the progressive overload method where one is sacrificed for the other. A very important aspect is that

special exercises can be maintained throughout the yearly cycle as well as during the time leading up to the contest. Percent training is far less demanding psychologically, reducing anxiety and stress and keeping blood pressure from rising too high. By constantly breaking gym records in special exercises, confidence is built and a sense of well-being is maintained leading up to the contest.

Time in Strength Training

Has it ever occurred to you how fast you can start a barbell moving or how fast you can move light weights (50–60%) or maximum weights? And what about the weights that are in between? Some athletes are very fast, and others are very strong. Remember two important points. First, be very explosive and accelerate throughout the movement. Second, you only have so long to complete a max lift or a work set. Then time runs out and your muscles don't last under the load anymore. You will fail. A common misconception is that the weaker lifter is moving the bar faster than his stronger and more powerful counterpart.

A solution is concentrating on bar velocity, which consists of an acceleration phase and deceleration phase. The latter can be greatly produced by placing bands and chains on the bar. Many think of resistance as the amount of weight on the bar, but every lift is related to time. For example, if a lifter can exert maximal force for only 3.5 seconds and the course of the bar is not completed in that amount of time, he will fail. So learn to build acceleration. Bar speed is critical.

Through many experiments I have performed at Westside, a time effect became apparent. I performed 35 fast reps with 315 in the full range deadlift. This was an all-out effort to say the least. This effort took roughly 60 seconds. I have performed 26 reps with 315 in the full deadlift using a slower, more deliberate style. I was completely fatigued in the same 60-second period even though the effort exerted was influenced by different rates of speed. I was limited by a time of 60 seconds. I couldn't go beyond this time regardless of the number of reps.

In a different experiment, I did 58 push-ups with my feet on a box and with a 100-lb plate on my back. This took roughly 60 seconds. At the same level of fitness, I was able to perform only 60 reps without a plate on my back going to total fatigue, which occurred in 60 seconds. This, of course, is strength endurance. This time element is an important factor.

Many of our all-time world record bench pressers and large 900 plus squatters were timed, and the same time factors occurred. For example, the max bench press effort took 3.25 seconds. This told us that we should be doing max effort exercises that take at least 3.25 seconds in full range movements. We would fail if the max lift was not completed in this timeframe. The time elapsed during strength efforts is dependent on the length of time each individual can exert maximally. This is true regardless of the magnitude of the load. Strength is measured in time and should be controlled by the coach for each athlete.

Importance of Volume

How important is controlling volume? What about the range of intensity? These are issues seldom addressed by today's lifters. I found out the hard way that the volume at a particular intensity range must be closely adhered to not only for the total number of lifts but also for

the number of lifts per set. They should be calculated. This was brought to my attention by AS Prilepin's research in 1974. His recommendations were as follows. If the number of lifts deviates significantly from optimal, a decrease in training effect occurs. This information is found in *Managing the Training of Weightlifters* by Laputin and Oleshko. Let's look at a simple example. The number of lifts should be performed on one of two training days. The light percents are for the development of explosive or speed strength. A few years ago, we were using between 50–60% of a contest max in the squat. Three lifters used 400 for 12 sets of two reps. That equals 9600 lbs of work at 50% of an 800 squat. At 60%, the lifts were reduced to 20. It was broken down to ten sets of two reps at 60%. That represents 480 lbs for ten sets of two reps or 9600 lbs. All three lifters squatted 804.

The training volume must greatly differ from workout to workout. This means total volume as well as intensity zone. Ben Tabachnik, inventor of the track parachute, said, "To never adapt to training is to adapt to training." And this is our philosophy also. There are 35 men who have totaled 2400 or more. At Westside, we have 25 members and five of them total over 2400. They have accomplished this by not falling into the trap of accommodation. You must plan for specificity or whatever will raise a particular lift. It seldom is possible to just do the lift. I believe that is why powerlifters are the most successful of all weight sports. Just think for a minute how many special training devices powerlifters use for each lift. There must be 20 for each.

Example #1:

A 700-lb squatter would use 350 (50%) for 12 sets of two reps, which is 8400 lbs of volume. At 60%, ten sets of two reps are performed or 420 lbs for 20 lifts, which equals 8400.

Example #2:

A 500-lb squatter would use 250 for 12 sets of two reps, which equals 6000 lbs of work. At 60%, ten sets of two reps are performed or 300 lbs for 20 lifts, which equals 6000.

I hope you can understand how important controlling the number of lifts at a certain intensity can be. The squats were done off a parallel box with 40 lbs of chain at the top.

On max effort day, three days later, we used the conjugate method where we perform core exercises similar to the classical lifts. We employ good mornings of many types, special squat bars, and other apparatus, but we never do a regular squat. Start increasing the bar weight after a good warm up. Do a lift of about 90%, try for a personal record and maybe one more, and then do your assistance work.

If you look at both days, it looks like this—80 lifts for explosive and speed-strength and 12 lifts for strength-speed and absolute strength per month. Remember, this represents training only the classic lifts. But it is easy to see a direct correlation between a contest max and volume trained at the correct intensity zones.

A very important factor is special exercises. The coach, who is many times the lifter himself, must find any weaknesses (i.e. a lagging muscle group). For squatting or deadlifting, the posterior chain must be developed. This includes the hamstrings, glutes, all back muscles, and hips. At Westside, this means the total work is distributed like this—40% special exercises for strength, 40% barbell lifts, and 20% restoration and flexibility.

This will sometimes amount to 14 workouts per week. Close to contest time, we do fewer barbell lifts and raise special work where needed. If your squat is stalled, more squatting won't help. You may need more back work or more ham and glute work. In the real world, a squat does not distribute the work evenly. If it did, injury would seldom occur. When reaching your highest potential, doing more classical lifts will only disturb good form.

The same holds true for deadlifting with even less deadlifting being performed. Training with a barbell held in the hands taxes the CNS heavily. This could lead to a negative training result. This is why we complement the deadlift with many variations of squatting and good mornings. Deadlifting is done with no more than 70% and only for singles. The intensity is raised by using short rest periods between sets, usually about 30 seconds when doing 6–10 total lifts. Learn the difference between training and testing the deadlift or squat. Obtain a box squat PR with added bands that represents your contest squat. A low box squat with the safety squat bar is a real indicator of absolute strength for squatting and deadlifting. This is done on our max effort day. Remember, if you squat 300 lbs, use 150–180 lbs on a box starting at 50% in a three-week wave and ending at 60%. In weeks one and two, do 12 sets of two reps while in the third week reduce the sets to ten. The bar volume is always the same, 3600, but the total volume increases during the three weeks by adjusting to new special exercises. With a little math, regardless of what you squat, the volume is customized for your top lift. At the same time, you are perfecting your form, raising your work capacity, and bringing up your lagging muscle groups.

In 1995, Zatsiorsky stated three methods of inducing maximal muscle tension:

- (1) overcoming maximal resistance that causes maximal or near maximal muscle tension (maximal effort method),
- (2) using considerably less than maximal resistance until fatigue causes one to fail (repetition method), and
- (3) using submaximal weights accompanied by maximal speed (dynamic method).

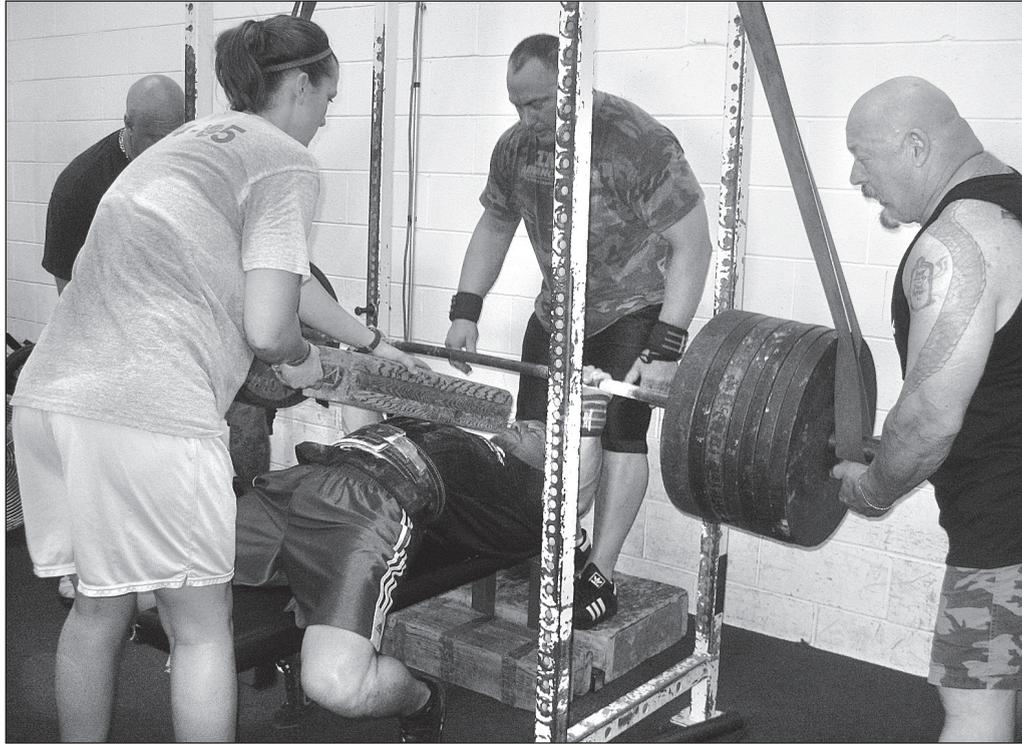
All three must be monitored at all times during the year. This explanation may seem simple to some or possibly too complicated for others. The keys to success are as follows:

1. volume with correct intensity (refer to Prilepin's intensity chart)
2. Use a max effort day and, 72 hours later, a dynamic method day
3. Raise work capacity

I have often been asked why high work capacity is so important. If you are in shape, the heavy weights and the high-volume training will have little negative effect on the lifter. If you are physically fragile, the training will affect you mentally as well as physically.

To calculate volume on max effort workouts, there are two methods to consider. The first is when the objective is to increase muscle mass in order to move into a higher weight class (e.g. 6–8 lifts in the 90% range). The second method is 3–4 sets of two reps, the second at 90% and then the next one or two a PR. We prefer the second method from a psychological point of view.

Regardless of how close it is to a meet or right after, try a record. A record is a process of time under tension. That is most important here. How long it takes to complete a max lift must



be duplicated with special core exercises such as good mornings or deadlifts. For ball players or Olympic lifters, the percent for squatting is 65–80% for dynamic day. The same procedure for max effort is used as explained earlier because we don't wear supportive gear on this day. For benching on dynamic day, the percent of a meet max with a shirt is roughly 40%

plus chains. If no chains or bands are added, use 50% of a shirtless max. If your max is 300, do eight sets of three reps using 150 lbs. That's 450 per set for a total of 3600 lbs of volume. With a 500 max, do eight sets of three reps with 250. That's 750 per set times eight sets equals 6000 lbs of barbell volume. Remember, this is a no-shirt bench. As you can see, regardless of your bench max, the percent and the number of lifts stay the same, but the volume is constantly increasing.

We don't record the volume of special exercises, but it must be constantly increasing in sets and top weight. Train special exercises in the correct sequence. For the deadlift and squat, work low back, hams and glutes, and abs in that order. Don't move on to the next exercise until the muscles are thoroughly worked. For the bench, do triceps, lats, upper back, and rear and side delts. The most essential muscle group must be the strongest or injuries will occur.

For bench max effort work, the same principles apply as for the squat and deadlift. On max effort day, the conjugate method must be used (i.e. using exercises that are mechanically similar to the classical lifts). Rotate to a different exercise each week. This allows you to lift 100% plus each week.

TRAINING METHODS

There is much talk about training philosophies, methods, and methodologies. It seems everyone has their own, which they devised on the basis of their own experience. They recommend such strategies as doing reps to failure to eliminate assistance work and doing only the squat, bench press, and deadlift. Have you ever wondered what the author has accomplished as a lifter, a trainer, or a scientist? Did they ever total Elite or field a team of Elites at a national meet? Did they ever make a top ten lift in one or more categories? Or is what they are doing a personal philosophy with no proven results?

It has been asked what philosophy Westside adheres to. The answer is none. We use training methodologies and the science of methods. Everything we do is based on a scientific principle. We can not be so arrogant as to form a personal philosophy. At Westside, we are responsible not only for our own training but for the training of our loyal readers. Many of our “extended members” have become national, world, and European champions.

Training is not as simple as doing five sets of five reps, five sets of ten reps, or any combination of sets and reps. You must plan to obtain certain objectives. Increases in speed, explosive strength, absolute strength, and stamina are equally important. It has been known and discussed in *Weightlifting for All Sports* by Ajan and Baroga that a greater training result can be obtained over a greater length of time by using special exercises than by doing the classical lifts. Doing the same exercises repeatedly will rapidly decrease your coordination. There are many reasons for this. Our observation is that very few lifters can increase their abilities without special exercises.

How do we train heavy continuously? The answer is to pick several special barbell exercises for a particular lift (e.g. the deadlift). The good morning is very similar in motion to deadlifting. A conventional deadlifter will no doubt bend over. Therefore, bent over good mornings will increase the deadlift. But remember, when doing the good morning, you must duplicate the action of your deadlift precisely in your brain. It is not so important to raise your good morning as it is to raise your deadlift by performing the good morning. We do many types of good mornings such as one with a safety squat bar suspended from chains. Remember to use the same body mechanics as you do in the deadlift.

Conjugate Method

A question that should be addressed is, when handling max lifts, how do you recover? And how do you at the same time increase muscle mass? The conjugate method is the answer. This is a complex method of rotating special exercises that are close in nature, in our case, to the power

lifts. This method also increases special strength qualities and perfects coordination, which will help advance technical skill. First, and most important, is to properly select exercises that address your particular problems. It could be an exercise that will build up a lagging muscle group or a special strength such as starting, eccentric, or accelerating strength.

Many methods are combined and rotated in the conjugate system. Combining the speed and max effort days, five elements of strength are trained:

1. quickness
2. explosiveness
4. speed-strength
5. strength-speed
6. absolute strength

This is much like a five-speed transmission in a car. We all know what happens if you miss a gear or take off in the wrong gear. Your car doesn't run very efficiently and neither will you. One must learn many methods to develop special strength and when to use them. You must also know your sports' goals. In some sports, speed is foremost and absolute strength is secondary. Both are more closely related than you think.

When lifters repeatedly use the same simple method of training to raise their strength level, they will eventually stall. Like the scholar who must utilize many sources of information to achieve a higher level of knowledge, the lifter must incorporate new and more difficult exercises to raise their standards. Many have the theory that to squat, bench, or deadlift more, you simply have to do the three lifts. If it were that simple, no one would need special exercises, machines, or systems of training. But we know this is not true.

Because lifters have different body types, they may excel at one lift but struggle with another. The great Lamar Gant was the only lifter I have known who held the world record deadlift and bench at the same time. There are men who hold three world records in the deadlift, yet can't make the top ten bench list. Their muscles in the upper body are, I'm sure, as strong as anyone's, but they are limited by body structure (e.g. short torso, long arms). Many of us are affected by this. But is there an answer?

In the early 1970s, the Dynamo Club in the former Soviet Union had 70 highly skilled Olympic lifters. They were introduced to a system of 20–45 special exercises grouped into 2–4 exercises per workout and were rotated as often as necessary to make continuous progress. They soon found out that as the squat, good morning, back raise, glute ham raise, or special pulls got stronger, so did their Olympic lifts. When asked about the system, only one lifter was satisfied with the number of special lifts. The rest wanted more to choose from. And so the conjugate system was originated.

When you have a body type that lacks say the muscles that squat and yet you squat on a regular basis, then a coupling of special exercises for the glutes, hamstrings, hips, and lower back are needed to fortify those areas. These special exercises will enable you to raise your squat once more. Think about it. If you read only one book, you will only learn so much no matter how many times you read it. If you only squat, you will get only so strong because no new stimulus is introduced. This may not happen in the early stages of training, but as you become more

advanced, you will need a more strenuous method of training. This training will indeed help your motor potential and help you to perfect your technical skill.

Before I present some examples of conjugate training, think about this. How much could you bench press the first time you tried? 200? Maybe 300? Now, how did you achieve that level of strength without ever having benched before? You did it through simplified training such as push-ups and pull-ups. Those of you who could bench 300 the first time will never double that amount without doing specialized work to raise your strength, right?

Here are some examples of the conjugate method. Glen Chabot bench presses only twice a month. Both times, he uses a close-grip style. He can do 405 for reps in the low teens. His best single close grip is 635 without a shirt. In between each workout, he rotates heavy dumbbell work on a flat or incline bench or very heavy bodybuilding exercises for lats, delts, pecs, and triceps. This linking of special exercises has given Glen a 705 bench press at 275. Glen does not arch when he benches and has fairly long arms. He realized that he needed a special program to fortify his pressing muscles. This is a simple but very effective training program.

Kenny Patterson had a more complex system. He did floor press, chain presses, board presses, incline presses, and overhead presses, just to name a few. He rotated a different exercise each max effort day. On dynamic day, Kenny used three different grips on the bench press and used 60% of his no-shirt max for eight sets of three reps. He added many triceps extensions with dumbbells or the barbell, rows (one-arm, two-arm, chest-supported), pull-downs, delt raises, and forearm work. This is a more complex system than Glen's, but it suited Kenny's needs. Kenny was a legitimate 700 bencher, having done it several times across the country.

Back in 2001, me and Mike Ruggiera made 900 squats. It was a 50-lb increase for him and a 40-lb increase for me, yet we did not do a single regular squat in between meets. We did box squats on speed days with a large amount of bands and weight. We also used the reverse hyper machine and did glute ham raises, pull-throughs, and abs. I pulled a weighted sled before my squat workouts. On max effort day, we did good mornings (five varieties), belt squats, speed deadlifts (60% for 6–8 singles), and safety power squat bar squats to different box heights. Mike also pulled his first 800 deadlift without having done any conventional squats or big deadlifts. After squatting, he did deadlifts for singles with 60% for speed, and three days later he maxed out on special work. This is the conjugate method.

To push up a squat, heavy good mornings or squatting with different bars is done on max effort day. The different bars make squatting very awkward and extremely hard to do, much harder than a regular squat. (The same is true of box squats. They are harder than competition squats.) On max effort day, we may do a type of squat in week one, a good morning in week two, and a front squat in week three. Each exercise contributes to the next week's exercise, which in turn will build a bigger squat by strengthening the weaker muscle group and perfecting form.

The training is linked together, enabling you to raise your total. For instance, to build the glute and hamstring area, push up your reverse hyperextensions as hard as possible until your progress slows. Move on to pull-throughs for a week or two until progress in these slows as well. Then go to glute ham raises and again push as fast and hard as possible. Then pull a sled walking forward to build the glutes and hamstrings. It is possible to continuously gain strength in any body part by switching special exercises. As the effectiveness of the exercise decreases, switch to another one. By training in this manner, it is possible to raise all types of strength throughout the year.



On max effort day, the entire volume consists of unidirectional loading. One training workout contributes to the next. Keep in mind that if you train a lift at 90% or more for more than three weeks, your central nervous system is negatively affected and your progress will go backward. But by switching exercises each week (for the high level lifter), you can use

100% and more each week. The sequence of exercises you use doesn't matter just as long as the load is maximal. The time it takes to do a maximal effort (i.e. a low box squat with a Manta Ray) lift is at least the same amount of time that it takes to do a max deadlift or squat. This is called "time under tension."

The conjugate method also improves special physical preparedness (SPP) (e.g. speed deadlifts, plyometrics) and general physical preparedness (GPP) (e.g. sled dragging). This is the most effective method to gain strength continuously throughout the year with no ridiculous off-season. No one can afford to take time off. By maintaining the speed work for the three lifts and increasing general work (e.g. upper and lower body sled work, lats, abs, triceps), you won't go backward. There are many methods of training, but by incorporating the conjugate method, you can't miss.

A popular special exercise for the deadlift is squatting off a very low box. Angelo Berardinelli does his off a six-inch box. At this depth, Angelo's back is in a position similar to his sumo deadlift style. We use a safety squat bar very often. When raising out of a squat or deadlift, the shoulders should raise first. The five-inch camber on the safety squat bar teaches you to raise the head and shoulders first. Otherwise, you will buckle over forward. To summarize, pick a core lift with a barbell and try to duplicate the same motion of the lift that you're trying to increase. Pick 4-5 core exercises that work for you and rotate one of them every two weeks. Do a max single for a 2-3 rep max, but no more.

For example, you could do bent over good mornings, safety squat bar squats, Zercher squats, or very low box squats and then finish with two weeks of rack pulls. This represents a ten-week cycle, rotating each of the above exercises in two-week mini-cycles. It is important that you end with the most productive exercise for you leading into the meet. After your selection of a core barbell exercise, pick 3-5 special exercises. Your workout should last less than 60 minutes. Pick a few special exercises and do them very intensely.

If your form is good, then your lower back may be holding you back. Again, select four exercises for the lower back such as back raises, straight leg deadlifts off a platform, pull-throughs with the legs straight, and reverse hyperextensions. Rotate them when necessary. For weak hamstrings, do heavy reverse hyperextensions, squatting pull-throughs, glute ham raises, and sled pulling with your hands behind your back or below your knees while holding onto a strap.

For weak glutes, do heavy reverse hyperextensions, low belt squats, high rep deadlifts (two sets of 20 with back arched, glutes pushed out to rear, shoulder-width stance, hands outside shoulder-width; after the first rep, drop the bar to just below the knees, and catch and raise it as fast as possible for the entire 20 reps), and glute ham raises. If your abs are weak, do side bends with a cable bar or dumbbell, leg raises, standing lat machine curl-overs, and strict sit-ups. Again, pick one exercise for each muscle group, use it until it becomes ineffective and then switch.

For the bench press, you could do board presses, floor presses, inclines, declines, or rack lockouts for singles. Rotate one of these every two weeks. You could do ultra wide bench presses for a 6RM or three sets to failure with dumbbells with a two-minute rest between sets for singles and a 5–6-minute rest for high reps. Then pick some type of triceps extensions with a bar or dumbbells, some type of lat work, and raises for the front, side, and rear delts.

There are many types of exercises for each muscle group. Just change when one stops working, and your lifts should continue to increase all year long. By training with this system, you can max out every week of the year while working continuously on speed and building muscle mass. It works for us, and it will work for you. It is the most effective form of training we have ever tried, and in the past 36 years, Westside lifters have tried them all.

Just remember, it's the selection that counts. You must pick a lift or exercise that builds your particular weakness. Don't get caught up in doing an exercise that your friends like but that does little for you. George Halbert has special exercises he uses for his bench. Chuck Vogelpohl does things that no one does, but they help his squat and deadlift. Amy Weisberger did front and overhead squats to help her squat.

Maximal Effort Method

On max effort day, the entire volume consists of unidirectional loading. One training workout contributes to the next. Keep in mind that if you train a lift at 90% or more for more than three weeks, your central nervous system is negatively affected and your progress will go backward. But by switching exercises each week (for the high level lifter), you can use 100% and more each week. The sequence of exercises you use does not matter just as long as the load is maximal. The time it takes to do a maximal effort (i.e. a low box squat with a Manta Ray) lift is at least the same amount of time that it takes to do a max deadlift or squat.

This is called "time under tension." Time under tension is the key for max effort work. You don't have to do conventional squats or deadlifts to improve these lifts. For example, world class throwers throw everything from medicine balls to hammers to long pipes, using objects of different weights. They throw everything except the official implement. This is the conjugate method in combination with the maximum effort method. It will improve form as well as build phenomenal strength.

On max effort day, we do good mornings (five varieties), belt squats, speed deadlifts (60% for 6–8 singles), and safety power squat bar squats to different box heights. Mike also pulled his first 800 deadlift without doing any conventional squats or big deadlifts. After squatting, he does deadlifts for singles with 60% for speed, and three days later, he maxes out on special work. This is the conjugate method.

To push up a squat, heavy good mornings or squatting with different bars is done on max effort day. The different bars make squatting very awkward and extremely hard to do, much harder than a regular squat. (The same is true of box squats. They are harder than competition squats.) On max effort day, we may do a type of squat in week one, a good morning in week two, and a front squat in week three. Each exercise contributes to the next week's exercise, which in turn will build a bigger squat by strengthening the weaker muscle groups and perfecting form.

Dynamic Effort Method

The dynamic effort method is used on squat/deadlift day and in the bench press. This method requires that the lifter lift sub-maximal weights as fast as he can. This method should be together with compensatory acceleration. You must apply as much force as possible to the barbell, pushing as hard and as fast as you can in the concentric phase of the lift. If you bench 700 lbs and are training with 350, then you should be applying 700 lbs of force to the barbell in each rep.



The weight used should be non-maximal in the 50–75% range. Many experts, like Siff, Verkeshonsky, and Spassev agree that this is the best range for developing explosive strength. This method is for increasing the force output. Many times being fast and strong are more closely related than you think.

Let's move on to two methods that develop both explosive and absolute strength—static-overcome-by-dynamic work and relaxed-overcome-by-dynamic work

Static means isometric, and dynamic can refer to concentric, eccentric, or what I am going to address—reversal strength. Reversal strength is developed, for example, by floor presses, board presses, and box squats. The value of these exercises is also a second means of strength development. When doing the three exercises noted above, both of these methods occur simultaneously. Some muscles and connective tissue are held relaxed while other muscles are held static.

Box squatting is an example. By sitting back, not down, on a box of any height, the

squatting muscles are stretched maximally. Relaxing the hip flexors, glutes, and obliques for 30 seconds to one minute and 30 seconds and flexing off the box dynamically in a box squat will also increase your pulls off the floor. A bar on the floor is static, and this position must be overcome dynamically. You can use a box height that duplicates the position of the second pull relative to the hip position. Rest the bar on the thighs and execute the second pull.

For the floor press, lower the bar until the elbows are in contact with the floor. Relax the triceps and other pressing muscles, flex dynamically, and press upward. For the board press, we use 2–3 2x6s attached together. Lower the bar quickly onto the boards, relax, and then explode concentrically.

If one does a pause squat or bench press, the bar's eccentric speed will be gradually reduced to zero. By using a box, board, or the floor, the bar has speed as it reaches any level, creating kinetic energy that greatly contributes to the concentric phase. Remember, lower, relax, and then contract dynamically. Don't forget, the stretch reflex lasts up to at least two seconds. All this illustrates that we have combined two proven methods of strength development both used during each week.

Repeated Effort Method

I have previously discussed the different methods of training that are utilized at Westside. The dynamic method replaces a maximal effort day and builds explosiveness and speed-strength. The maximal effort method builds strength-speed and absolute strength.

We know that training with weights above 90% for three weeks will cause a negative training effect. To remedy this, the conjugate method is employed. Each week on maximal effort day we use a different core exercise and max out with 100% or more. It can be a good morning, pull, or special squat for the squat and deadlift or a floor press or board press for the bench press. If you think about it, Strongman events are really the conjugate method. It's not uncommon for a top Strongman to deadlift 800 or more.

Many don't realize it, but we also use the repetition method to failure, though never in the classical lifts. Rather, we do special exercises with dumbbells, belt squats, the reverse hyper, and so forth. I prefer to do repetitions for time in a slow tempo and don't bother to count reps.

If this sounds new to you, it's not. In the 1970s, the great Olympic lifter, Vasili Alexeyev, used a variation of the repetition method for part of his training. He sometimes did power cleans non-stop for 2–3 minutes. He did various hybrid exercises like the front squat, push press, squats with the bar on his back, and drop squats. The bar weight was light but would work every muscle cell. He did a warm up by throwing a 220-lb barbell over his head backward 100 times. Then after practicing the snatch for over two hours, he spent an hour in the pool, lifting his legs hundreds of times to strengthen his abdomen. He leaped nearly 1000 times and used many exercises to gain great strength in order to raise his work capacity and, of course, his total. This is precisely what Westside is after.

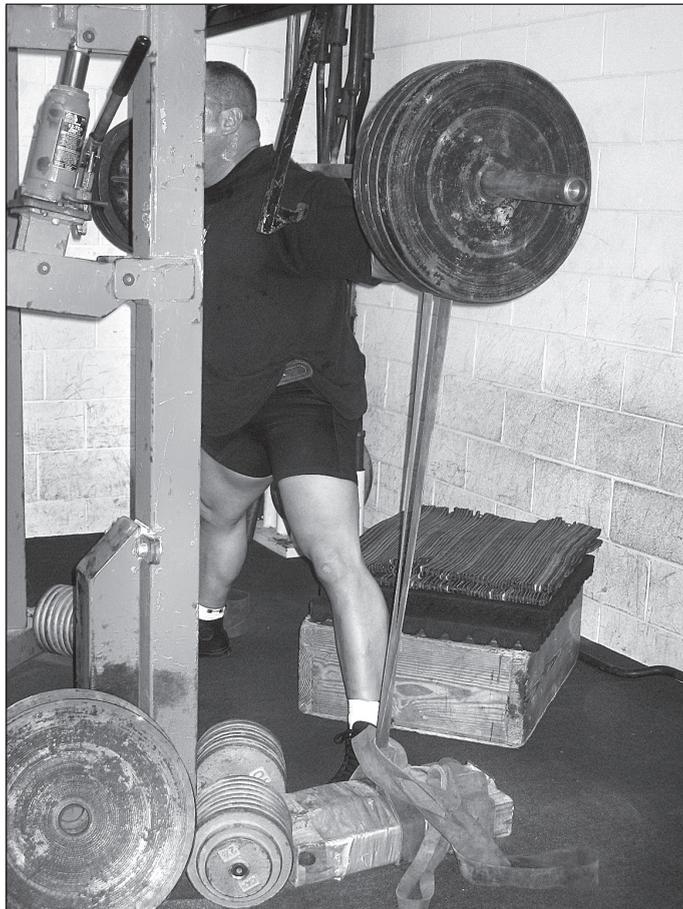
Here are some examples of how the repetition method is used at Westside:

1. For the squat or deadlift, I will do belt squats for 3–4 sets of three minute sets, 2–3 sets of abs, or the reverse hyper for 1–3 sets of 1–3 minutes each.
2. Another workout consists of band good mornings with a single set sometimes lasting

- 6–8 minutes depending on band tension. Follow this with light dumbbell presses for 2–4 minutes nonstop.
3. Walk with a sled for up to five minutes with light resistance. Follow with abdominal work.
 4. Do light deadlifts for 1–3 minutes followed by abdominal work for at least two minutes.
 5. Pick up a barbell and throw it overhead behind you or do the same exercise with medicine balls. This works the entire body. After throwing it, simply walk over to it and do another rep.
 6. Do band leg curls for 3–6 minutes followed immediately by band leg extensions.
 7. Perform dumbbell power cleans for 1–3 minutes either holding them at your waist, on your shoulders, or, of course, over your head.
 8. Do dumbbell pressing on a bench or (my preference) on a stability ball. I use three different weights depending on the day. After the dynamic workout, I use 100s for three minutes. On max effort day, I have done 75s for five minutes. Four or five times a week, I use 40s for a set of 3–10 minutes.

Using weights of roughly 20–30% will serve as restoration because they're not heavy enough to stop adequate circulation via strong muscle contraction. To validate some of the findings at Westside, high reps with very light weight are stated as being beneficial in the rep range of 100–200 in *Science of Sports Training* by Thomas Kurz. Olympic long jumper, Diane Guthrie, had been doing 250 leg curls every day using 10-lb ankle weights. She noted that when she slacked off the work, she incurred leg injuries.

People make a mistake thinking that there is only one method of training. In fact, there are



many, and they must coexist in a continuous chain of proven methods. When doing the workouts I have outlined, remember to do them with a slow tempo. This means 6–10 reps per minute, resting between reps while still holding onto the bar or dumbbell. Regardless of where you hold the bar or dumbbell, it will work the muscles to their fullest extent.

A great benefit of the repetition method is an increase not only in all strength but also in endurance. This method is also commonly known as lactic acid tolerance training. It promotes a high degree of growth hormone production, which can increase size and strength. I suggest that at least two levels of intensity be used—one for strength and one for restoration. The latter should use 30% of the max or less. As your absolute strength increases, all your strength qualities increase. When I could do 100-lb dumbbells for 40 seconds, I could do 30s for one minute 30

seconds. Later, when I did 100s for three minutes, I did 50s for eight minutes and 75s for five minutes. When your top strength goes up, so does your strength endurance with less than max weights.

Size strength endurance and restoration can all be gained using this method. It is a simple and effective way to raise work capacity and volume to increase your total as well as your fitness level. This method worked for the greatest Olympic lifter of all time, Vasili Alexeyev, and one of the greatest benchers by formula, George Halbert.

Methods Breakdown in Training

I. Max Effort Day

At Westside, we train with either very light weights or max weights. Very seldom do we use medium weights in the 80% to low-90% range. We prefer to break new ground, continually trying new records in special squats, pulls, good mornings, or benches. Remember, if you train at 90% or higher for more than three weeks, you will fail because of central nervous system fatigue. We max out each week. How? Simply by switching exercises each week. This is the conjugate method.

As Dr. Zatsiorsky states, “Why climb three-quarters up the mountain only to go back down and start back over?” He is, of course, referring to the progressive overload system. This system is a dead-end street. It was obsolete 40 years ago. At Westside, we get faster, stronger, and more muscular all year long. Here’s how. Westside Barbell is closed to the public. Its members go to meets regularly. Because all 30 members compete, we send about a third of our lifters to a particular meet. This enables some of us to help our teammates. I believe our success comes from maxing out on maximum effort day even if you aren’t going to a meet. This goes on all year long.

Our maximum effort system is much like the Bulgarian model. Regardless of our trainability, we max out. It might not be an all-time record, but it’s all you’re capable of on that day. This means that lifters who are not close to a meet will not get PRs. The lifters who are approaching a meet should make PRs, although the Bulgarians use primarily six main exercises. We use countless special exercises designed to build the weakness of each lifter in all three lifts. The system we find most effective is the conjugate system—a wide variety of special exercises are constantly rotated to make training more effective and fun. This system allows for a longer lifting career. If you have a longer career in any sport, you will benefit from new technology such as tracks, balls, ball fields, and, in our case, supportive gear.

The following illustrates how we use various methods in our training. Let’s start with the maximum effort bench day, which occurs 72 hours after the speed bench day. This is because 72 hours should separate extreme workouts, and we max out each week. Let’s look at the floor press. The floor press can be done with pure weight or with 3–5 sets of chains to accommodate resistance. It can be done with at least three different band tensions. This also accommodates resistance but alters the speed of the bar. The unexpected can happen at a meet. The weight can seem harder or easier than expected. By alternating the amount of bands or chains, the bar velocity can change, which happens during each attempt. You can use a regular bench and add weight releasers. This is a pure reactive method. The weight is released on the first rep of each

set at the bottom. This causes a contrast effect. The contrast method is one where the weight is different at the bottom compared to the top of the lift. This method can be used with any style of pressing including incline, decline, or seated.

In the bench, we will lower the bar as fast as possible and then catch it just before it hits the chest and reverse from eccentric to concentric as fast as possible. This ballistic lifting is to be done with speed-strength weights of 40–60% while doing your triples. A word of caution—do not use maximal weights. Although ballistic training is not plyometric, it does ensure a rapid shock loading effect, resulting in a strong myostatic stretch reflex. In addition, it takes advantage of the stored energy of the connective and elastic tissues of the muscle complex during eccentric muscle contraction. Power rack training for developing a fast rate of force development can be done with your speed-strength sets off pins or from chains by resting the bar at any point from the chest to lockout and then exploding to lockout. Simply relax the muscles and then contract them concentrically as fast as possible. Remember to relax after each lowering phase for 3–4 seconds to reduce stored energy before doing additional reps. To avoid overtraining, take into account the different rates of adaptation to all training systems. Box squatting and floor pressing combine two proven methods of strength development: relaxed-overcome-by-dynamic work and static-overcome-by-dynamic work. Both build explosive and absolute strength.

Box jumps and rebounding on special devices are examples of shock training. To be explosive, this method is necessary. The most extreme work should be performed the day before max effort day. This is to prevent delayed onset of muscular soreness (DOMS), which occurs 48 hours after intense exercise. DOMS can be avoided by doing small restoration workouts 6–12 hours after one of the four major workouts. Small, 20-minute workouts for strength gains in particular muscle groups can also be done to develop general physical preparedness (GPP) or special physical preparedness (SPP). A small workout can be done for flexibility, agility, or balance. All lifters should do at least 2–10 extra workouts per week. This is especially true for drug-free lifters to provide some form of restoration. There are many methods of training that are used on both max effort and speed day. It is also very important to change core and special exercises frequently. It is vital to change bar speed by using bands, chains, weight releasers, heavy weight, and light weight. Monitor your intensity zones properly. For example, a 400-lb squatter should do proportionally the same amount of work as a 900-lb squatter. Remember that just when your body has all the answers, you have to change the questions.

II. Dynamic Effort Day

While recovering from my second lower back injury (for which doctors recommended removing two disks, taking off a bone spur, and fusing my vertebrae, with no guarantees), I decided that I had to take a new approach to lifting or disappear like everyone else who lifted in the early 1970s. I called Bud Chamiga in Michigan and asked for several of his books that were translated from Russian. These books contained an abundance of science combined with special strength training.

These materials helped me realize that lifting was a combination of biometrics, physics, and mathematics, unlike what I had previously thought. There was no mention of training with 5s or 3s. I had followed the progressive overload system since my first Olympic lifting meet in 1960. The only period in which I did not compete was from 1966–1969 when I was in the army. In

1983, I was going nowhere with my training. I was stronger but slower. That's where Bud's books were invaluable. They described methods of training and organization that I had never heard of before. Furthermore, no one in the United States used these methods until I started writing about them in *Powerlifting USA*.

On speed day, use sub-maximal weights with maximal speed. This method is used to increase the rate of force development and explosive strength, not to build absolute strength. For squatting, do 10–12 sets of two reps. For benching, do 8–9 sets of three reps. For deadlifting, do 6–10 sets of one rep after squatting.

Contrast and Reactive Methods

Another method for developing explosive strength is weight releasers. Hook chains or bands to the weight releasers (we welded bar attachments to ours) to accommodate resistance while lowering the bar. A key point to remember is not to lower the bar slowly. This diminishes the effect of added kinetic energy production. Weight releasers provide one overload rep on each set. The recommended load on weight releasers is 20% of the barbell load (e.g. 400 lbs on the bar and 80 lbs on the weight releasers). Use chain weight on the weight releasers for best results. Bands are a contrast method. We use only jump stretch bands. Only higher ranked lifters should use bands. For speed-strength, 65% of the total weight should be barbell weight and 35% should be bar tension. For strength-speed or slow strength used with maximal weights, 65% of the total weight should come from band tension and 35% should be barbell weight.

I will outline some of the more common ones. One reactive method is heavy-light sets. First, lift a heavy barbell for 1–3 reps. Take a short rest of 10–20 seconds, reduce the weight 20%, and repeat for 1–3 reps. The best method is to use two sets of jump stretch bands. Perform a set of bench, squats, or pulls. Rest 10–20 seconds and remove a set of bands. Then do a second set. Bands work best when used with bar weight. They accomplish several objectives including (1) accommodating resistance, (2) the near elimination of the deceleration phase that exists with bar weight alone, and (3) added kinetic energy by the accelerated eccentric phase, which provides extra elastic excitatory deformation in the muscle and connective tissue. Using the bands to increase the speed considerably in the eccentric phase causes a greater amount of kinetic energy through which a maximal dynamic force is developed quickly. The loads can be made greater by using a combination of bands plus bar weight. If only bar weight is used, it would be too heavy in the bottom. If only bands are used, the weight at the bottom would be too light. By using strong bands to increase the rate of fall or eccentric speed, greater kinetic energy is developed producing even greater muscular force development at the instant of switching from eccentric to concentric work plus a shorter amortization transition.

While discussing the reactive method, we must also look at the contrast method. Let's move on to two methods that develop explosive and absolute strength. The first is static overcome by dynamic work. Static means isometric, and dynamic can refer to concentric, eccentric, or what I'm going to address—reversal strength.

Reversal strength is developed, for example, by floor presses, board presses, and box squats. The value of these exercises is also a second means of strength development—relaxed overcome by dynamic work. When doing the three exercises noted above, both of these methods occur



simultaneously. Some muscles and connective tissue are held relaxed while other muscles are held static.

Box squatting is an example. By sitting back, not down, on a box of any height, the squatting muscles are stretched maximally. Relaxing the hip flexors, glutes, and obliques for 30 seconds to one minute and 30 seconds and flexing off the box dynamically in a box squat will also increase your pulls off the floor. A bar on the floor is static, and this position must be overcome dynamically. You can use a box height that duplicates the position of the second pull relative to the hip position. Rest the bar on the thighs and execute the second pull. For the floor press, lower the bar until the elbows are in contact with the floor. Relax the triceps and other pressing muscles and then flex dynamically and press upward. For the board press, we use two, 2x6s attached together. Lower the bar quickly onto the boards, relax, and then explode concentrically.

If one does a pause squat or bench press, the bar's eccentric speed will be gradually reduced to zero. By using a box, a board, or the floor, the bar has speed as it reaches any level, creating kinetic energy that greatly contributes to the concentric phase. Remember, lower, relax, and then contract dynamically. Don't forget, the stretch reflex lasts up to at least two seconds.

All this illustrates that we have combined two proven methods of strength development, both used during each week. When using barbells for the reactive method effect, it is best to use a large amount of band tension or a large amount of chains on the weight releasers and a small amount of bar weight.

Many strength coaches call me about power and speed training, but very few ask about building absolute strength. If your reactive strength grows, your jumping and running ability will increase. That is why men can outperform women in the 100-meter, shot put, basketball, football, and weightlifting. Most coaches are constantly working on speed and quickness, but that's the trait they recruited. Why constantly work on what they already have? Most stay away from heavy weight training for fear of overtaxing their athletes. However, when running full speed, four, five, and sometimes six times body weight is produced during foot contact. Still, a 300-lb lineman is lucky to squat twice his body weight. Relative strength is much lower for large men compared with smaller, lighter men. What about lifters and other athletes who aren't very strong? How can they increase their explosive power? They can increase their explosive power by using the reactive method. Here's how.

One reactive method exercise is weight releasers. Here, extra weight is added to the bar on the eccentric phase by the use of weight releasers. It is common to lower 80% of your 1RM

and raise 60%. This is done by putting 20% of the load on the weight releasers. As they release the load, the body reacts to the sudden reduction of weight and then accelerates concentrically to completion. The lifter reacts as if the original 80% was on the bar. This develops maximum acceleration and reversal strength. The eccentric phase should be as fast as possible, preferably five- to six-tenths of a second. Lowering slowly will build only muscle size and will cause most muscular soreness. The squats are done for two reps, 6–10 sets. This method is frequently used by Matt Smith and John Stafford.

Basically, the same method is used for bench pressing. We do 6–10 sets of three reps. Of course, only the first rep is a contrast rep because the weight releaser device falls off. This is good because eccentric work causes the most muscle soreness due to muscle spindle damage.

A second method for contrasting a load is the lightened method. At Westside, a strong pair of jump stretch bands are attached to our seven-foot power rack at the top. In the bottom of a squat, 135 lbs weighs zero. By adding 90 lbs to the bar, it now weighs 90 at the bottom but 225 at the top. By adding a second set of 45 lbs, the weight at the top is 315 and 180 at the bottom. Your brain quickly learns that the load, while very light at the bottom, becomes quite heavy at the top. This teaches one to accelerate maximally to completion and not to decelerate near completion, which occurs with just barbell weight.

This system was first used in youth training overseas. If one could squat only 90 lbs, the load would seem light at the bottom after starting at the top with 225. Unlike the weight releaser system, the total load is reloaded as one stands. An extreme set up would look like this. Fix the bands so that there is 250 lbs less at the bottom of a squat. Load the bar to 1000 lbs. Set up with the 1000 lbs.

The weight becomes lighter as one descends to the bottom until it is reduced to 750 lbs. The weight reduction is caused by the bands supporting part of the load. Then return to the top. As the weight is raised, the bands gradually reload to the original 1000 lbs.

This is a very effective reactive method. One becomes accustomed with a heavy load at the start of the squat while maximizing strength at the bottom and explosively returning to completion.

Westside often uses this method for benching as well. While the deadlift does not require an eccentric phase in contests, we do deadlifts in a similar fashion. The bar is reduced by 135 lbs on the floor by the support of the jump-stretch bands attached to the top of the power rack. After locking out the deadlift, the entire 135 lbs is lifted out of the bands. This method teaches an explosive start and acceleration to the top.

Let's look at a slightly different method—the heavy-light method. The first system employs bands. For benching on speed day, use two sets of mini-bands with your prescribed amount of barbell weight after a thorough warm up. After doing five sets of triples, take off a set of mini-bands and do the remaining sets. The bar will feel extremely light.

Fred Boldt does 205 lbs bar weight plus two sets of mini-bands equaling 170 lbs at the top and 80 at the chest. After four sets of three reps with two sets of bands done with a bar speed of about 0.75 meters/second, Fred takes off a set of mini-bands. Now, the bar speed increases to 0.8 meters/second. Fred's body reacts as if the original two sets of bands were still on the bar.

The contrast between the heavy and light load causes added stimulus to the central nervous system, producing added acceleration. This method can be used for squatting and deadlifting or even Olympic pulls.

If you don't have weight releasers or jump-stretch bands, the heavy-light method can be done by first using a weight of roughly 90% for 1–2 reps for 2–3 sets. Then reduce the bar weight to 40–60% and do 2–3 sets of 2–3 reps. This can be done on all lifts in addition to weighted dips, weighted pull-ups, or box jumps. Keep the reps low to conserve energy. A note to ball players—it's great to be quick, but quickness is just one component of speed. Quickness is defined as an action of the body that does not require muscular effort or the complex coordination requiring energy (*Soviet Training and Recovery Methods* by Ben Tabachnik).

Lightened Method

By attaching bands to the top of the power rack or Monolift, the total barbell weight can be reduced in the bottom of the lift. The percent reduction can range from 15–25%. This method builds your rate of force development by overcoming a load with a medium to heavy concentric movement. The lightened method is used often at Westside.

Place a set of jump stretch bands over the top of a power rack. Hanging at seven feet, a 155-lb barbell will weigh zero at your chest with blue bands, but after locking it out, it returns to 155. With sub-maximal weight, this does not seem to be productive, but when max or near max weights are used, it teaches one to accelerate to the top. It will develop acceleration or strength-speed. If done as recommended, it will duplicate your top bench with a bench shirt. If less band tension is used (purple band), it is very close to your shirtless best. Do pressing without gear. This will also work for the overhead press and push jerks.

Use the same process for deadlifting or power cleans. While the bar is on the floor, 135 lbs is deloaded. For squatting, attach the bands to the top of the rack to deload the weight in the bottom. At Westside Barbell, we often use the contrast methods—bands, chains, and, of course, the lightened method. For squatting, we use three different bands: the light band, the monster mini-band, and the mini-band. A light band hung over the Monolift will reduce the load around 200 lbs in the bottom of the squat. Remember, we always box squat just below parallel. A monster mini-band will reduce the load 110 lbs, and a mini-band will unload the bar about 55 lbs. If our intention is to become stronger, we start with the mini-bands. We add weight for three weeks, wave back, and then start a second three-week wave with the monster mini-bands. Again, we wave back and start a new three-week wave with the light bands. The stronger the band, the greater the contrast.

A nine-week wave would look like this.

With a mini-band at the top:

Week	Weight	Sets	Reps	Weight at top	Weight at bottom
1	455	8	2	455	400
2	505	8	2	505	450
3	555	6	2	555	505
4	605	8	2	605	495
5	655	8	2	655	545
6	705	6	2	705	595

With a light band at the top:

Week	Weight	Sets	Reps	Weight at top	Weight at bottom
7	755	8	2	755	555
8	805	8	2	805	605
9	855	6	2	855	655

This series of squats is done off a box just below parallel. The rest between sets is one minute and 15 seconds to one minute and 30 seconds.

We use this system at Westside on a regular basis. It is less taxing on the body. It is important to learn acceleration and even more important to change the rate of acceleration. The lightened method is just one way to accomplish this. This method is also used on max effort day as one of our rotations.

Harold made a lightened method squat of 1115 at the top and 1000 at the bottom. His best squat is 1005. Matt Smith has used the same method with 1150 at the top and 1035 on the box, which has produced an 1102 squat. As you can see, Tim's effort falls short of Matt's, but this sets a standard to realize a contest potential.

Although this method was used for youth training in the old Soviet Union, at Westside it is used in many of our exercises with great success. It has helped produce two 1100 squats—one at 268 body weight for Chuck Vogelpohl (a world record)—plus five, 1000 squats.

Westside often uses the lightened method in the bench press. For benching, we use four different strength bands. For max effort work, we primarily use the strong bands and the medium bands. The bands are choked at the top of a seven-foot power rack. This reduces the bar weight at the chest by 155 lbs. With 455 lbs on the bar, the weight is reduced to 300 at the chest, but the weight is reloaded progressively until lockout, which is again 455. In a second max effort workout, we would use a medium band to reduce the load 95 lbs at the bottom. After unracking the bar loaded to 455, it reduces to 350 at the chest and returns to 455 at lockout. A light band at the top of the rack will reduce the load at the chest by 65 lbs. This time, 455 at the top will weigh 390 at the chest.

As you can see, the greater the band strength, the greater the contrast. This system builds speed or absolute strength depending on band tension. For speed benching, we use a light band or a monster mini-band. A 500-lb raw bencher would use a bar weight of 315. Light bands would reduce the bar weight to 250 or 50%, at chest level. This is a good alternative to other speed work. The three most common are bands, chains, and weight releasers.

For pulling, we use a strong band looped over a pin 5'6" off the ground, which will unload the bar at floor level about 135 lbs. Joe Bayles pulled 745 with the lightened method. This resulted in a 775 PR at a meet. This was greater than a 30-lb positive result. Tim Harold pulled 900 and later pulled 855 at a meet, which was a PR but a 45-lb negative result.

Regardless, this will give some guidelines to go by.

This method is also very good for high pulls as well as increasing the second pull. Kneeling cleans, snatches, and squats are used in the same way.

Use your imagination. You can use the lightened method for JM presses, triceps extensions, overhead presses, inclines, and declines. It is a fantastic tool for all sports. It will increase not

only your vertical jump and long jump but also your hand speed. It teaches you to accelerate throughout the entire range of motion. Conventional weight training has a distinct deceleration phase. The lightened method will help eliminate this phenomenon.

Look at it this way. With this method, a young ball player can unrack 135 in the squat, but at the bottom, it weighs nothing. So 225 at the top would be 90 at the bottom and 315 at the top would be 180 in the hole, and so forth. This teaches acceleration. One must take advantage of all training methods to succeed.

People are getting stronger every day and are smart enough to make the most of their equipment. Don't be a hater. Take advantage of everything at your disposal. If the great lifters of the 70s, 80s, and 90s had shirts and suits, you can bet the bank they would use them. Some of these lifters lasted only five or six years. If they had modern day gear, maybe they would still be competing with today's stars.

Ballistic Method

One form of the reactive method is the ballistic method. This is described as a rapid stretching movement. At Westside we use it for bench pressing with sub-maximal weights on speed day. Basically, drop or lower the bar as fast as possible and catch it 1–4 inches off your chest. Reverse to the concentric phase as fast as possible. This is great for building reversal strength. Never, I repeat, never pause the bar on the chest in training. Kinetic energy is lost to some extent. A pause is just a powerlifting rule. The stretch reflex will remain for up to four seconds in high-skilled lifters and two seconds for less skilled athletes, as noted by Wilson's studies. If you pause longer than your normal reflex time, potential energy is lost. Didn't someone say an object at rest tends to stay at rest? Remember, Newton's first, second, and third laws act in some way during all phases of a lift: eccentric, static, and concentric.

Concentric Method

With the bar suspended by chains or using power rack pins, simply crawl under the bar and raise it concentrically. Going from a relaxed condition to overcoming a stable load with light and medium loads of 50–80% will develop a rapid rate of force development. When loads of 90% and above are used, this causes maximal force rather than the appearance of explosiveness. It may appear somewhat slow because of the massive external resistance. The second method with 90–100% or more should be used on max effort day.

Dynamic Method

For benching or squatting, 20–24 total lifts are standard on dynamic method day. For benching, use 40–50% of a 1RM with a method of accommodating resistance (i.e. bands or chains). For squatting, use 50–60% with a method of accommodating resistance. Bands or chains must always be used to greatly reduce the deceleration phase. You can stand up for a long time with a weight at the top of the squat. However, with a large bar load made up of mostly band tension, you are being pulled back down, causing a force exceeding gravity. Box squats, floor presses, and board presses are good methods for developing a rapid rate of force development after an eccentric phase accompanied by a relaxed phase.



Many former college athletes are very explosive but lack a high level of maximal strength. They are very fast with light weight, but as the load grows to near max (95% and higher), they slow considerably. This can be corrected by using a higher percentage of band tension—65% of total bar load. This slows the movement down while developing absolute

strength. Maximal force is displayed for 0.3 seconds. This can be prolonged by using bands to prevent a quick bar deceleration. The late Dr Mel Siff agreed with this. We have a 63-foot shot putter who said he has always been quick with a 363 power clean and a 565 deadlift at 250 body weight. However, he could not budge a 600 deadlift. He has zero quickness there. Speed is relative when compared to the amount of resistance.

Pendulum Wave

On dynamic day, use a three-week pendulum wave. For example, for the squat, do 50% in week one, 55% in week two, 60% in week three, and back to 50% in week four. Change from bands to chains, add weight releasers, use the lightened method of overcoming a rested load, or change your grip or stance.

Muscle Priority Sets Train the most underdeveloped muscle groups first or a skill that is lacking.

Verbal Commands Always use verbal commands such as “blast it,” “drive it,” “speed,” “squeeze the bar,” “head up,” “sit back,” and so on.

Conjugate Sequence Method

Always rotate special exercises on speed day. The more inquiring you are (extroverted), the more often you must switch exercises and the fewer exercises you need. Change is the hardest thing for some lifters. We combine many methods on speed day to fortify our training. If one used a single method, it would take forever to utilize them all and they would not be productive. No one will ever understand the true definition of strength by just reading a book. You must become strong to recognize a weakness.

WESTSIDE SYSTEM INTRODUCTION

If you are to excel at sports, you have to develop special strength qualities that pertain to your sport's activities. Don't generalize strength and make it into weak or strong or fast or slow. However, you can be strong and slow or weak and fast. Some believe there is only one way to weight train. They don't recognize that an individual needs special activities to increase his speed or maximal strength. Many people seem to think that a very strong person lacks endurance or is slower than a man of average strength.

The Westside system uses conjugated periodization. This means that several methods are employed to the training system simultaneously. Unlike the Western method of periodization, which separates these into different periods, the Westside system puts it all together at the same time.

The Westside method is based on three basic methods of achieving maximal muscle contraction:

1. Max effort method
2. Repetition method
3. Dynamic effort method

Overview of the Westside program

The Westside micro-cycle is seven days long. It has two days for the squat, two days for the deadlift, and two days for the bench press. One day is for max effort work in the squat, deadlift, and bench press, and one day is for dynamic effort work in the squat, deadlift, and bench press.

The squat and deadlift are trained on the same day. The speed day should fall 72 hours after the max effort day. This is to allow for enough recovery time.

The training week consist of following days:

Monday: Max effort squat and deadlift

1. The max effort exercise:

The max effort exercise should be trained using the maximal effort method. Work up to 1–3 rep max. Sometimes use the repetition method and do reps to failure.

Sample max effort exercise execution:

Reverse band deadlift	Sets	Reps	Weight
	2	5	135
	1	3	225
	1	2	315
	1	1	405
	1	1	455
	1	1	495
	1	1	545 PR
	1	1	575 fail

Max effort work periodization:

	Cycle 1	Cycle 2
Week 1	camber bar good morning	sled work
Week 2	low box safety squat bar	reverse band deadlift
Week 3	rest	sled work
Week 4	take a weight with gear	suspended good morning

This outline is what your training can look like after it has been monitored. You should not plan the max effort exercises too much in advance.

2. Supplemental exercises:

This is based on an analysis of the lifter. Do an exercise that works your glutes and hamstrings, lower back, or abs, depending on what your weakest point is or what adds to your squat and deadlift the most. This can be working up to heavy set of 5 reps in the 45-degree back extension, doing 3–5 sets of 6–12 reps on the glute ham raise, or doing many sets of curls with bands.

3. Accessory exercises:

These include abdominal exercises such as standing ab work in the lat machine for 3–4 sets of 8–15 reps and lower back exercises such as reverse hyper extensions for 3–4 sets of 8–15 reps.

4. Other exercises: Do other exercises such as lat work, grip, or neck training. These can be done for pre-habilitation, added volume, or progressive recovery.

Sample workouts for Monday:

Workout #1:

1. deadlift standing on a block work up to max 1
2. glute ham raises 4x6–8
3. weighted leg raises 3x10
4. reverse hypers 3x10
5. neck extensions 2x20

Workout #2:

1. low box safety squat bar work up to max 1
2. leg curls with bands 3x15
3. reverse hypers 3x15
4. side work with landmine 3–4 sets

Workout #3:

1. reverse hypers 5–8x8–12
2. standing abs on lat machine 5–8x8–12
3. t-bar rows 3–5 sets
4. grip work 3–5 sets

Wednesday: Max effort bench press

1. The max effort exercise: Work up to 1–3 rep max using the repetition method at times. The max effort exercise should be trained using the maximal effort method. Sometimes the repeated effort method is used.

Sample max effort exercise execution:

2-board press	Sets	Reps	Weight	
	2	5	95	off chest
	1	3	135	off chest
	1	2	185	off chest
	1	1	225	off chest
	1	1	275	add boards from here
	1	1	315	
	1	1	365	
	1	1	415	
	1	1	455	
	1	1	475	PR, stopped here

Max effort work periodization:

	Cycle 1	Cycle 2
Week 1	floor press	dumbbell press for reps
Week 2	reverse band press	3-board press
Week 3	rack lockouts	bench with chains
Week 4	take a weight with shirt	rest

Again, this outline is what your training can look like after it has been monitored. You should not plan the max effort exercises too much in advance.

2. Supplemental exercises: This is based on an analysis of the lifter. In the bench press, this means mostly exercises for triceps strength such as triceps extensions with dumbbells or a straight bar, 3- or 6-board presses, JM presses, or close grip presses.

3. Accessory exercises: These include lat and upper back work such as lat pull-downs or upright rows done for 3–4 sets of 8–15 reps and shoulder and chest exercises such as dumbbell presses or delt raises.

4. Other exercises: Do other exercises such as rotator cuff work, upper body sled work, and forearm training. These can be done for pre-habilitation, added volume, or progressive recovery.

Sample workouts for Wednesday:

Workout #1:

1. Bench with mini-bands work up to max 1
2. incline triceps extension 5x8
3. chest supported row 3x10–15
4. side delt raises 3x10–15
5. hammer curls 2x20

Workout #2:

1. dumbbell press max rep sets with 2 weights or 3x8–15
2. straight bar triceps extension 3x5
3. lat pull-downs 4x10
4. upper body sled work 4 trips

Workout #3:

1. 2-board press work up to max 1
2. 4- or 5-board press work up to max 5
3. elbows out extensions 3x15
4. one arm rows 3x15
5. face pulls 3x15

Max effort guidelines:

1. Don't prepare mentally or you will burn yourself out.
2. Don't plan the ME exercises too much in advance.
3. The most important things are time under tension and strain (max effort), not the records
4. Limit the number of lifts over 90% to 2–3. Do one with 90%, one with 95–98%, and then try for a record. You can also jump from 92–95% straight to a new record.
5. It isn't necessary to do max effort work every week.

Max effort standards:

- Load: 90–100 % +
- ME exercises per workout: 1
- ME exercises per week 1 for the squat/deadlift and 1 for the bench
- Reps 1–3
- Rest 2–5 minutes
- Weeks per ME exercise 1–2

Friday: Dynamic squat and deadlift

1. The box squat: This is the basic format for squat and deadlift training. You should usually perform 6–8x2 at 40–60% of your max depending on your background and level. The number of sets varies depending on whether you use chains or bands or straight weight.
 - 5–6x2 with bands
 - 6–8x2 with chains
 - 8–12x2 with straight weight

The most important factor on bar weight and percents is the lifter's level of preparation:

- advantaged lifters 40–50%
- medium level lifters 45–55%
- beginners 50–60%

This may sound strange, but the higher your level of preparation, the more force you can put on the bar. Beginners can use only 40% of this strength while top lifters can use 70–80% of their potential. Simply put, this is a skill you develop through years of training.

Sample dynamic box squat execution:

Box squat	sets	reps	weight
	2	3-5	135
	2	2	185
	1	2	225
	1	2	275
	1	2	315
	8	2	375

2. Speed deadlifts: This means do explosive singles at 50–70% of your max. These are done after dynamic box squats and are not necessary performed every week. The usual speed deadlift workout would be 5–6x1 with 50–60% of our best in the meet.

Sample speed deadlift execution:

Deadlift	sets	reps	weight
	1	1	135
	1	1	225
	1	1	315
	5	1	405

3. Accessory exercises: These include abdominal exercises and lower back exercises.

4. Other exercises: Try other exercises such as lat work, grip, or neck training. These can be done for pre-habilitation, added volume, or progressive recovery.

Sample workouts on Friday:

Workout #1:

box squats	6x2x45% using bands
speed deadlifts	5x1x45% with the mini-bands
reverse hypers	4x10
straight leg raises	4x10

Workout #2:

box squats	12x2x55%
sled work	5–6 trips with heavy weight
Russian twist	3x6-8
one leg reverse hypers	3x6-8
lat pulls to abs	2x15
neck training	2–3 sets

Workout #3:

box squats	8x2x50% using chains
speed deadlifts	6x1x60%
glute ham raises	5x8–12
ab work on a lat machine	3–4 sets
sled work	2–3 trips with very light weight

Sunday: Dynamic bench press

1. The bench press: Work up to eight sets of three reps using three different grips all inside the rings. The correct training percentage would be 45–50% of your shirtless max for competitive powerlifters and 50–60% for less advantaged lifters.

Sample dynamic bench press workout:

Bench press	sets	reps	weight
	2	5	45
	2	3	95
	1	3	135
	8	3	185

2. Supplemental exercises: Perform some triceps work. Try exercises like close grip bench presses, JM presses, and dumbbell or barbell extensions. Sets and reps may vary from 4–6x8–12 to working up to heavy set of five reps.

3. Accessory exercises: Try other triceps exercises like push-downs or elbows out extensions, lat and upper back work like lat pull-downs or any kind of rows, and shoulder and chest exercises such as delt raises and weighted push-ups.

4. Other exercises: Try other exercises such as rotator cuff work, upper body sled work, and forearm training. These can be done for pre-habilitation, added volume, or progressive recovery.

Sample dynamic bench press workouts:

Workout #1:

bench press	8x3x45%/raw max using one chain per side
4- or 5-board press	work up to 2–3x5
lat pull downs	3x15
rear delt raises	3x15
upper body sled work	2–3 trips with very light weight

Workout #2:

bench press	10x3x35%/meet best
close grip press	5x5
elbows out extensions	2x20
hammer curls	2x20
reverse hypers	2–3 light sets each for 25–35 reps
ab work	2–3 light sets each for 25–35 reps

Workout #3:

bench press	8x3x45%/raw max using mini bands
dumbbell extensions	5x12 lying on the floor
chest supported rows	5x12
one arm side delt raise	2x15
rotator cuff work	4–8 light sets

Dynamic effort guidelines:

1. Bar speed is the most important factor.
2. Percentages are mentioned as a guideline.
3. One set should be performed within a specific timeframe than do a max single.
4. Use maximum force no matter what the bar weight is.
5. Do heavier sets occasionally to monitor bar speed.

Dynamic effort standards:

- Load: 40–60%
- DE exercises per workout: 1 (2 when doing deadlifts and box squats)
- DE exercises per week 1–2 for squat/deadlift and 1 for bench
- Reps 2 for squat, 3 for bench, 1 for deadlift
- Rest 30–90 seconds
- Weeks per DE exercise 3–4 week mini-periods

In the other parts of this book, you'll learn how Westside's top lifters train. Also, in part two, you'll discover how many different ways there are to train and how much training can vary.

DEVELOPING SPECIAL STRENGTHS

Having trained a 70'10" shot putter, Kevin Akins, I found that shot putters were very explosive and very strong. Kevin was very fast as a freshman at OSU but not strong. At 6'4" and weighting 260, he could squat 450, bench 360, deadlift 500, and power clean 275. He threw 60 feet. As a senior weighing 330, he squatted 825 with no suit, benched 550 with no shirt, deadlifted 710, and power cleaned 420. He made a 70'10" shot. He was now fast and strong. Kevin was very good, but what about the very best in the sport?

Udo Beyer of the DDR was, to say the least, ungodly strong. At 352, his squat was 992 without equipment. He did a 672 pause bench. But possibly his greatest lift was a push jerk from behind the head—660 for ten singles in one workout. His best shot put in 1978 was 72'8" (world record). He was able to make progress up to 1986 and made a world record 74'3.5". Udo was a product of great strength with little concern for raising speed. His teammate and prototype of the future was Ulf Timmermann. His strength was not that of Udo's. Ulf had a 727 squat, 352 snatch, and 418 bench. But he was the fastest with weights of 50–70%. Ulf's shot put distance was 75'8" (world record). The DDR had arrived. They found that to succeed, one must become stronger and faster.

Vasily Alexeyev, the great former Soviet super heavyweight, was a perfect example of the importance of speed. He was ranked tenth in the late 1960s. At that time, he was required to lose weight until he was able to execute a pull fast enough to satisfy the coaches. Once that was accomplished, he could again gain weight. But if his pulls slowed, he was not allowed to gain more weight. As time went on, his strength and size increased and so did his speed. The end result was that he produced more world records than any Olympic lifter. Forty years ago, the Soviets knew how important it was to match force and velocity.

Being fast won't do it alone and being strong won't do it alone. We found this to be true at Westside in 1983. We were constantly getting stronger but were not making the big lifts at the meets to correspond to our training lifts. Although we were getting stronger, we were getting slower. We started using the dynamic method with sub-maximal weights. In 1993, we were using 72% of our contest best in the bench press. Now in 2001, we are using 45%, and we may go lower. We were already strong in 1993, and now we are much stronger but also much faster. If you are fast, don't neglect getting stronger.

Remember two important points—be very explosive and accelerate throughout the movement and you only have so long to complete a max lift or a work set. When time runs out and your muscles don't work under the load anymore, you will fail.

Maximal Strength

First, let's talk about maximal strength. This is the basis of all types of strength. No one can do multiple reps (10–12) with 400 lbs in the squat if his best single is 420. But if his squat was 550,

then 400 for reps would be quite possible. Similarly, a long-distance runner who can squat only 50 lbs for 100 reps will perform better than a long-distance runner who can squat only 50 lbs for 100 reps. A stronger person can have greater endurance, particularly strength endurance.

Strength Endurance

What is strength endurance? Strength endurance is the ability to perform a lengthy display of muscular tension with minimal loss of work capacity. There are two forms of strength endurance—static and dynamic.

To develop strength endurance, one must consider the intensity or speed of execution. Middle-distance runners should do one rep per second for 60 seconds and then rest long enough to bring the pulse rate back to normal. Then repeat. Your GPP determines how many sets as well as the rest between sets. You may feel that you have good endurance for running only, but you may be unable to box for three rounds. You must look at exercise specificity to excel at your sport.

Repetitions to failure are one method for building strength endurance. Sub-maximal weights are used. This method is not intended for weights above 75% of a one rep max, which constrains one to develop mostly strength, not endurance. Although hypertrophy is a by-product of strength training in general, the repetition to failure method can raise volume. However, it can lower intensity levels and add muscle mass, which may or may not be desirable depending on if you are trying to maintain your weight class or move up. It is very important to adhere to the correct percentages. For sports using strength in conditions of speed, the weight percent to failure is 30–50%. For weight lifters, it is 50–75%, and for sports where stamina is used, it is 50–80%.

Dr. T. Alan and Professor L. Baroga suggest 9–12 sets per session. This is very taxing but fast and efficient. Results come quickly. Because this method is mentally and physically taxing, we suggest using it for two consecutive weeks at most.



Speed-Strength
Powerlifting and weight lifting are speed-strength types of activities. Each requires one to execute a lift at full speed and have the strength to do it. You must lift near limit weights to develop quick strength. We include two types of training to achieve this goal:

- a dynamic day where weight at 40–60% is used to increase force production
- a maximum effort day where very heavy weights are used in special exercises

A visitor named Rocco and I were doing strength-speed work. Rocco's best box squat was 415 plus two blues and a green band on both sides. When I was using two blues and a green band, my best meet squat was 900. Rocco's best is 675. Rocco lacks speed.

When using the dynamic method, sub-maximal weights are used. Although loads of 66–85% with a rep range of 3–6 is recommended by some, we have adjusted the loads for squatting to 50–60% using two reps per set. At least six sets of two reps should be done by novices, not to exceed 12 sets of two reps with just weight. This is based on a just below parallel box, and the 50–60% max is based on an actual contest max. In the bench press, the training weight is 60% of a one rep max without a bench shirt, or eight sets of three reps. Both squat and bench sets should be done every 60 seconds or less. It is important to use maximum speed.

Strength-Speed

Strength-speed is the ability to move heavy weights as fast as possible. To develop strength-speed, we use the method of maximum effort. On this day, one must make a maximal effort with weights at 100% plus. When a weight is made over 100%, this is referred to as over maximal. One or two reps are employed. When powerlifting, three lifts work best—one at 90% and one or two lifts that are more than your previous max. For weightlifting, use exercises such as pulls with a snatch or clean grip (4–10 lifts) just as long as the proper height is maintained. How do you know if you lack strength-speed? Chuck Vogelpohl was doing speed work with a visitor named Jack. They both used 405 plus blue bands and both had identical speed. Then Chuck added 90 lbs for a set. Jack couldn't do the 495. Chuck worked up to 585 and 635. How? Chuck possesses both speed-strength and strength-speed. Jack lacks strength-speed. Chuck's top squat is 1000 at 220 and Jack's is 675 at 220.

When using 90% and above for more than three weeks, one's progress will cease. To avoid this, switch the maximal effort exercises each week. This is referred to as the conjugate method—using exercises that resemble the classical lift. This method is used to perfect technique.

Isometric Strength

How do you develop quasi-isometric strength? In powerlifting, you may have to push or pull for a long length of time while locking out a bench or deadlift, respectively. But if you think in sports terms, this can also occur when two linemen or two wrestlers are in combat. Here, the velocity is extremely slow. This is different from standard isometrics where the bar or object is motionless or fixed. To develop quasi-isometric strength, use a barbell at the position where you are having problems (e.g. the last four inches in the bench press).

Next, apply a large amount of bands to the bar so a slow start is achieved, making the lockout nearly impossible. A second method is to start the bar below the minimax and extend the arms to the precise point where you fail with or without the arms locked. This can be done with any lift, including the snatch and clean. Of course, this can be done in eccentric or concentric fashion. The benefits are that it can build maximal strength and active flexibility. The cons are that it has no effect on maximal power or speed.

With standard isometrics, strength can be developed not only at the precise angle one exerts from but also in a radius of 15 degrees either way. Here, the velocity is zero. When moving a bar off the chest dynamically, the work at that point is very short. The same would be true when lifting a bar off the floor while executing a second pull. This may occur in only a fraction of a second or the work is done in a very short amount of time. This can be greatly changed by isometric contraction at those desired positions. In sports where high-speed movements are present, isometric work is less effective. Its main purpose is to develop absolute strength when doing long contractions of 3–5 seconds. But it can also be used to develop explosive strength just as dynamic exercises do by pushing or pulling violently with quick jerks. With pure isometrics, the rise in muscle tension is slow, and with explosive isometrics, the rise in muscle tension is fast. For example, if you look at a deadlift in simple terms, the rate of movement starts explosively and eventually reaches zero velocity at the top or somewhere near isometric.

Isometric exercises have been around since the 1950s. It was an effective method to develop strength at a particular angle and affordable to most because of the limited amount of equipment needed.

The famous Bob Hoffman of York Barbell fame manufactured an isometric power rack in the 1960s. T Hettinger and E. Mueller found that a small workout daily for ten weeks increased strength about 5% per week, which was maintained for a month.

There has always been the question, which is more productive—dynamic or isometric exercises? In my opinion, both must be trained. There are always pros and cons for any type of training. Here are the benefits:

- Isometrics take less time and energy to perform a workout.
- You can maintain speed-strength while doing isometric training.
- For those wanting to remain in a particular weight class, isometrics won't add muscle mass.
- They fortify technique in crucial positions. A coach can watch to see form breaks at many different angles of the lift.
- Maximal effort can be displayed longer than with dynamic work.

When doing dynamic work, maximal effort is displayed for a fraction of a second at the minimax or sticking point. While doing speed deadlifts, all looks well. The bar is blasted from the floor to lockout. However, with a max effort deadlift, the bar stops at the knee or just before lockout. Hardly any work is done at the minimax. It's just too fast. A three-second isometric hold can be equal to many dynamic contractions.

The work at a particular angle is radiated 15% either above or below the point where the force is applied. It sounds contradictory, but holding your breath can boost endurance. Remember, a swimmer inhales only once every 3–4 strokes.

The following points are disadvantages of isometrics:

- Isometrics are not to be used before puberty or if one is a novice.
- Isometrics can fatigue the central nervous system.
- If done alone, a loss of some coordination will occur.

- Holding your breath for a long time can have a negative effect on the cardiovascular system.

How are isometrics performed? Here is how Westside does them.

The simplest way is to push or pull against a pin, which can be placed at different positions. For example, if you are weak at the floor, pull on a relaxed bar at that position or just below the knee, at the knee, and possibly at the lockout.

Like all isometric contractions, you can use submaximal or maximal efforts while exerting on the bar. Also, the duration that you push or pull on the bar can vary from 2–6 seconds per exertion.

Quasi-isometrics is pushing or pulling slowly over a certain range of motion. This can be done by attaching a series of jump stretch bands to the bar. For example, loop a series of bands over a bar placed on the floor. Now, it is possible to lift the bar very slowly through a predetermined range of motion. Adjust the bands to work the part of the lift that needs to be improved.

Dynamic isometrics involves pulling or pushing a bar against a pin as fast as possible with a brief contraction. Because of the short contraction, it is possible to do several efforts. However, it is essential to perform the movement as fast as possible to produce a steep force/time curve like slower isometrics where the contractions are sometimes 3–6 seconds per effort. The dynamic effort can be limited to one second per effort. Three efforts of one second can replace a three-second effort if done dynamically.

Perform 3–5 positions for static work with the work radiating 15 degrees above and below the point being pushed or pulled upon. This will satisfy the entire range of motion. Although isometrics are found to develop absolute strength, they also increase dynamic strength. Verkhoshansky found that the time one holds a position isometrically is as important as the intensity of the hold.



I have always preferred the Hoffman method. For example, lift 400 upward for a predetermined distance into a pin. Hold for 3–6 seconds. A weight of 400 would be 75% of a 600 max. It is very hard to calculate how much you are truly exerting against a chosen pin. For absolute strength, hold maximal tension. For explosive strength, use maximal speed and exert 70–80% against the pin. The faster you get to 70–80%, the better.

Isometrics are very effective but also very taxing. The faster the lift is performed, the less time the minimax is worked. All training methods must be used during training. It is up to the coach to know when to utilize a particular training method. For a more detailed explanation of the above, see Verkhoshansky (1970) or *The Fundamentals of Special Strength-Training in Sport*.

Remember, the faster the rate of force

development against the pin, the better. The longer the exertion against the bar, the greater the results even with different intensities. Don't exceed ten minutes of isometric work per workout. Like any training, rotate isometrics throughout the year. For explosive strength, one must produce maximum speed as fast as possible against the pin. The simplest form of isometrics is just tensing the muscles as in a bodybuilding pose. This was advocated by Vorobyev in 1978 and as early as the 1900s by Anokhin and Proshchik by forcefully tensing the agonists and antagonists for every joint. I hope just some small part of this article will awaken your mind to try a new method of training.

Explosive Strength

Explosive strength is the ability to use the muscles and central nervous system to achieve maximum force as quickly as possible after an intense muscular stretch. Research by Frolov and Levshunov (1979) showed that high-skilled weight lifters who had high results in the jerk from the chest performed the half squat quickly and instantaneously switched to thrusting the barbell.

Explosive strength is another strength quality. This type of strength is displayed best after a mechanical stretch, meaning the switch from stretching to active contraction. This is the reactive ability to change directions. For pulls, use hang cleans. For the bench, use the ballistic method, or in other words, the drop and catch, off the floor press done from a relaxed phase overcome by dynamic work. For squatting, box squat correctly. Sit on the box and release the hips and glutes, holding all other muscles contracted. Then flex.

Explosive strength is developed after a strong stretch that builds kinetic energy during the lowering phase in different forms. Shock training builds explosive strength. Some examples include:

- hang cleans or hang snatches
- depth jumps
- push jerks
- box squats or box squats with bands, chains, or weight releasers.
- Two of the best methods to build explosive and absolute strength are:
- static overcome by dynamic work
- relaxed overcome by dynamic work

Box squatting accomplishes both. Some muscles are held statically and some are relaxed during the movement. Before we move on, I want to address the following—why do many fail to increase their jumping ability while increasing their squat? The most probable reason is that as their squat weight goes up, the bar speed slows. They concentrate only on strength-speed while neglecting speed-strength. Approximately 80 lifts per month must be devoted to explosive and speed-strength and roughly 16 lifts per month for strength-speed. Both should be done during the same week. If you work for only quickness, you will lose some absolute strength in two weeks. If you work only to raise absolute strength, you will lose some quickness in two weeks as well. You must train for all types of strength during the week.

Here are some things to think about. A boxer fights with eight-ounce gloves. When a boxer goes from 16-ounce gloves to eight-ounce gloves his hand speed increases. This is a contrast effect and an example of explosive strength. Sprinters will wear a weighted vest or a parachute when training and remove it for competition. This is also a contrast method.

Whereas depth jumps provide a reactive movement through using the momentum of a falling body, a hang clean or snatch and box squatting enable one to direct the body in more favorable angles to pre-stretch the muscles. Regardless of the height of the box, the landing angles stay close to the same in plyometrics. But hang pulls can be done at varying heights to catch the bar before starting the pull. Box squatting also can be done from many different heights.

Plyometrics are just one type of shock training. Others include maximal eccentrics, forced reps, all contrast methods mentioned above, and anti-restricted range of motions to max (partials).

Accelerating Strength

To ensure the development of accelerating strength, bands or chains should be employed while using a bar or dumbbells. I believe this can prolong the rate of maximal force production during an exertion. This simply means that one is accommodating resistance making barbell training more productive.

Eccentric and Concentric Strength

The powerlifts require many strength qualities. Two of these are the ability to lower and raise weights. This means eccentric and concentric work. In the bench press, there is a pause at the meet, but in training, pausing is not necessary. The stretch reflex is stored internally for most lifters in two seconds and for the highly trained athletes up to four seconds (as reported by Wilson 1998).

Concentric Strength

Because the squat and bench require eccentric work followed by concentric work, both must be worked. The deadlift does not require the ability to lower the weight, only to raise it concentrically. To overcome inertia, a great amount of starting strength is required. At Westside, we do good mornings, and half of the good mornings are done concentrically by supporting the bar from heavy duty chains. Chains are used instead of the power rack to allow the bar to swing freely from front to back and left to right. This builds greater stability.

This chain-supported method works well for the bench press also. With these exercises, you must overcome inertia without the aid of a stretch reflex. This is physically very demanding, but this type of strength is required in the deadlift. We use different bars that change the distance between the lower back and the center of the bar. Many different heights are used to ensure strength development through the entire range of motion. This is very awkward and represents only strength work, not technical work. This method of training will overcome a minimax, commonly referred to as a sticking point. Usually the sticking point occurs when the leverages are poorest and the resistance is greatest. This causes the lifter to fail at that point.

Momentum is a product of the mass of an object and its velocity. It can carry the bar through the minimax. Training at your minimax is one solution.

Eccentric Strength

What do we really know about eccentric (lowering) work? The eccentric phase causes most muscular soreness or the burn that bodybuilders talk about. When performed slowly, it greatly contributes to muscle hypertrophy (growth). We also know that in an attempt to raise absolute strength, eccentric training alone fails miserably.

In the late 1970s, Mike Bridges experimented with eccentric bench pressing. He told me that the only result he got from eccentrics was a pec injury. This is confirmed by research that shows that most injuries occur during the yielding or eccentric phase.

Vince Anello also experimented with eccentric work, performing eccentric deadlifts with as much as 880. When he returned to conventional deadlifts, his deadlift had decreased much to his dismay.

Vince told me that anything will make your deadlift go up, except eccentrics. What does this mean? Are eccentrics a waste? Well, yes and no. Eccentric training alone is a waste. However, a strength-shortening cycle and eccentric training followed by a concentric phase can be very beneficial when done correctly (i.e. with optimal speed).

Training with heavy weights will add strength potential to muscles, and training with light weights with a rapid concentric phase will increase speed and explosive strength. It is obvious that without the lowering or eccentric phase there would be no sudden stretch preceding a voluntary effort.

Kinetic energy is gathered in the eccentric phase. This causes a sudden release of elastic energy stored in the tendons and soft tissues of the body. Heavier weight will not add to the rebound phase as effectively as using an overspeed eccentric phase.

How can this be done? Using jump stretch bands will cause a forced overspeed eccentric phase. This is maximal powermetrics. The combination of eccentric and concentric actions forms a natural type of muscle functioning called the stretch-shortening cycle (SSC) (Norman and Komi 1979; Komi 1984).

In the calculation of kinetic energy, increasing velocity is much more important than increasing mass. This is because velocity is squared into the equation $KE = (1/2)mv$. This is why the squat-under in Olympic lifting is so important. When the lifter falls under the bar, he is producing kinetic energy for reversing the direction of the bar. This dropping under the bar should not be confused with an eccentric phase. For an eccentric phase to occur, muscle tension must accompany the action. The squat-under has no such muscle tension.

We know that 40–50% more muscle can be used during the eccentric phase and this is where a real problem occurs. As the barbell grows heavier, one tends to lower the bar more slowly. However, this is counterproductive. When slowing down the eccentric motion, we are emitting the energy that can be stored in the muscles and tendons. The myostatic reflex occurs when a muscle is stretched by an external force. Yes, this causes a stretch reflex, but the faster the eccentric phase, the greater the stretch reflex. This, of course, can have a negative effect on the Golgi tendon reflex. The Golgi tendon reflex helps prevent extremely high and potentially dangerous loads to the tendon. With overspeed eccentrics, we try to override this phenomenon.

In *Science and Practice of Strength Training*, Zatsiorsky states that Elite athletes develop very high forces of elastic energy in the tendons rather than the muscles. This should alert us to lower the barbell at an optimal speed as the weights grow heavier. If the barbell slows down as the weight grows heavier, the length of the muscle is stretched and the muscle tension increases, which could lead to injury.

Because this myostatic reflex is counterbalanced by the Golgi tendon reflex, an inhibition of muscle action occurs, causing a less than maximal concentric phase. Of course, this limits the potential to overcome heavier loads in training or at meet time.

The answer to this dilemma is to use only enough eccentric muscle tension to control the barbell in the correct path. If in fact one uses 40–50% more muscle tension to lower weights, does it not make sense to use only up to 50% of your eccentric strength when lowering a weight? This will contribute to a stronger concentric phase producing a higher result.

Using the Tendo unit, we found that when doing speed strength work in the bench press and squat, the eccentric phase moves at a rate of 0.7–0.8 meters per second (m/s). This is basically the same as the concentric phase. This maximizes the stretch reflex. Simply said, the faster down, the faster up. With near maximal weight, the same trend was observed. The eccentric and concentric phases were both 0.45–0.6 m/s. Band and bar weight were used to achieve these results. When all resistance was from barbell and plate weight, the lowering time was considerably longer. The eccentric phase was 0.4 m/s on the speed squat and bench and 0.6 m/s for the concentric phase. With near maximal weight, the eccentric phase was 0.37 m/s and the concentric phase was 0.40–0.50 m/s. This means that bands can play a valuable role in increasing the eccentric phase of barbell lifts. This will teach you to use less eccentric muscle action. As weights grow heavier, the bar speed should find an optimal speed, regardless of external resistance.

The above data was collected using eight 900 plus squatters and eight 600 plus benchers. The results were nearly equal for both phases, with each 600 plus lifter varying less than a tenth of a meter/second eccentrically or concentrically. With circa-max weights, I was the slowest by a small margin during both phases. Dave Tate was the fastest.

On speed work, the same results were obtained. J. L. Holdsworth was the fastest and Chuck Vogelpohl was the slowest. Again, only one-tenth of a meter/second separated the eccentric and concentric phase of each lifter. The same results occurred in the bench press.

In the above test, all bench subjects benched in T-shirts. All squatters wore standard groove briefs without knee wraps and squatted on a box. All subjects were at the same level of general physical preparedness.

We performed one test on six men who were all national and world champions with squats ranging from 900–975 at the time. First, the bar was loaded to 640 lbs of band tension at the top part of the squat. At the bottom, just below parallel, the band tension was 470. The bands were added slowly as a warm up. Then bar weight was added until the bar has 285 on it. That equals 925 at the top and 755 at the bottom.

All six lifters performed a single rep, which was timed on video camera. Then 80 lbs of chain was placed on weight releasers. The bar was lowered fairly fast at 1.5 seconds. After the 80 lbs of chain was deloaded at the bottom, the lifters recovered faster concentrically than without the additional chain. The lift represents 1005 at the top, which was deloaded to 755. Again, an additional 80 lbs of chain was added to the weight releasers. The weight was 1085 at the top and the original 755 on bottom. The concentric phase was even faster. When 80 lbs of chain was added to 1165 on top and 755 on the bottom, the bar speed increased again.

The key to lifting larger weights is concentrating on the eccentric phase, especially with the overspeed eccentric method, using a large amount of tension. Learn to relax to reduce some muscle tension in the eccentric phase to prevent inhibiting the stretch reflex, and watch your total go crazy.

Sakari Selkainaho

Part II

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TRAINING OF THE POWER LIFTS

You must become faster to become stronger. To become stronger, you must become faster. The special work will make you bigger. Bigger, faster, and stronger—isn't that what we're after?

Technique

When striving for proper technique, our intentions are to lift the most weight in contest situations. Proper technique isn't intended to produce a championship physique but rather a world record performance.

Technique is a tool for a lifter to build the best leverages possible. With good form, you can stress your strong points and eliminate weaknesses. To analyze and build technical skills, the lifts can be divided into smaller segments:

1. setting up
2. unracking the bar
3. ascent
4. reversing direction
5. descent
6. replacing the bar

For the deadlift, parts 2–4 are unnecessary.

Squat

Most people think that the squat as a multi-joint movement. I see it as flexion of the spinal erectors and hip flexors and a slight extension of the knees. If you watch a good squat technician, nothing moves but the hip joint. He bends only at the hips. His back doesn't move, and his knees don't go forward. Others push gradually throughout the lift, just enough to accommodate the external force that is being applied.

The feet should point straight out and forward. This forces the hip muscles into play. It is hard to break parallel because the hip flexors and extensors are put into a very strong position for flexion. Turn the feet outward slightly if you are not flexible enough or if you have a thick waistline and thick upper thighs. If you see someone walking with their feet turned outward, they have weak hamstrings.

When you squat, think about pushing your feet out, not down. That will ensure that the hip muscles are working correctly. Push your knees out the entire time, starting from the moment you unrack the bar. You should feel this in the hips. Next, start pushing the glutes to the rear as though

you are searching for a chair that is too far behind you. Arch the lower back hard and keep the chest and head up. Lean as much as possible to keep the bar in your center of gravity.

To ensure correct bar placement, raise the chest and pull the shoulder blades together. This creates better leverages by placing the bar as far back as possible. However, if you carry the bar too low, it causes you to bend forward and destroys the leverages. The hands should be wide enough to avoid bicep tendonitis. Pull the elbows forward again by contracting the shoulder blades together.

Which stance should you use? Everyone should box squat with a wide stance. This builds the all important hip muscles. Over 30 years ago, the great Jim Williams said to train as wide as possible and pull your stance in so that you can break parallel in a meet.

While descending, always squat back, not down. If you push the glutes back, the knees won't go forward. By forcing your knees apart, you are significantly increasing your leverages. After breaking parallel, you must first push against the bar. After all, the bar is what we are trying to raise. Pushing with the feet first is a mistake. This causes the lifter to bend over and most likely to miss the lift.

Breathing is important. First, take air into the abdominal section and chest. Hold the air until you have reached the hardest part of the lift. Exhale when you are near the top position.

Bench Press

For training, use 3–4 different grips. Alternate from the index finger just touching the smooth part of the bar to a grip that is two inches wider than the grip where the little finger is in contact with the power ring. Take the bar out of the rack by yourself, pulling the shoulder blades together and gripping the bar as tight as possible. Next, pull the bar out of the rack as if you were doing a pull-over. This activates the lats properly. Pull the bar straight above the point on the chest where you want to lower it. Lower the bar quickly in a straight line.

Press the bar straight up and slightly toward the feet. This is the shortest distance to press and eliminates shoulder rotation. Rotating the bar back over the face can cause rotator and pec injuries. Never intentionally push the bar over the face.

Hold your breath for up to five reps. Holding the breath defines heavy training. Take as much air in as possible before lifting the bar from the rack. Lower the bar as fast as possible. Stop the bar as fast as possible and reverse to the concentric phase as fast as possible. When training, raise your head as the bar is lowered and keep your eyes on the bar throughout the movement. Use either a thumbless grip or a thumb grip.

Your technique during competition should be the same as in training with one exception. Use a maximum wide grip with a thumb grip and use a lift off. As the bar is lowered, raise the head first and then the shoulders as if you were doing a sit-up. This will enable you to bring the bar lower on the body without rolling it out of your hands.

Once the press command is given, slam your head and shoulders back down on the bench for stability. Keep the feet out in front of the knees and press down on the heels to ensure that your butt stays on the bench. A longer torso is more advantageous for bench pressing. Therefore, avoid shortening the torso by arching the lower back. In addition, an extreme arch can cause an injury.

Deadlift

When using the conventional style, center the bar over the joint of the big toe or a little closer. A good distance to start pulling is usually when the bar is 3–4 inches from your shins. If you get too close to the bar, it may swing forward when you pull upward. This causes difficulties at the lockout. The shoulder joints must be behind or over the bar when starting the pull. Pull slightly toward the center of the body to keep the bar close to the legs and always push the feet out to the sides. For most lifters, pointing the feet out provides a stronger start because of the greater leg drive. This position enables a strong finish because of increased hip rotation.

The back position can vary because of the wide variety of body structures. Most lifters arch their lower back while rounding the upper back at the same time. However, don't round your back too much because it will be difficult to lockout. You may get stuck in the knees. It is an advantage as long as the bar stays close to your shins. The head position can vary anywhere from looking straight ahead to looking downward about six feet in front of you.

The most common grip is the standard reverse grip. Some lifters use an overhand hook grip with the arms hanging in a straight line. As you get bigger, you may have to use a wider grip. When using sumo style in deadlifting, the width of your stance depends on your flexibility. The longer your legs are, the wider your stance. Keep the hips as high as possible, provided your back is in the proper position. Pull yourself slightly lower than your optimal starting position. Push your hips against the bar and rebound out of the bottom.

For breathing, keep the air out of the lungs. Use abdominal breathing. This keeps the torso short for better leverages and builds stability. Keep in mind that your body structure dictates which style is best for you.



PERIODIZATION

Periodization simply means the organization of training plans for one year or more into shorter manageable plans (i.e. weekly or monthly). At Westside, a weekly plan is used on max effort day. Each week, the lifter switches a barbell exercise, always working up to a max single in a special squat or box, rack, or band deadlift. This is the maximal effort method. Only good mornings with an eccentric phase preceding a concentric phase are performed for a 3RM. This is the method of heavy efforts. Westside has proven that the max effort method is superior. Why? A new plateau is reached creating positive physical and psychological effects.

The heavy efforts method raises a problem of high volume but no new, absolute records. A heavy effort means weights above 90% of a 1RM. Lifting weights at 90% or more for three weeks or longer will cause a negative effect on the central nervous system. To prevent this phenomenon, we switch the core lift each week. As one's special physical preparedness increases, the training effect decreases. This is why new means of training must be introduced constantly and why exercises are rotated each week. This is the conjugate system—using exercises that are similar to the classic exercise for either weight lifting or powerlifting. This provides unidirectional loading that highly stimulates motor potential and perfects technical skill.

The same holds true for bench pressing. The floor press, board press, rack work, incline, decline, and others are conjugate exercises. To clarify, max effort work is done once a week. For bench pressing, it is done 72 hours after speed-strength benching. At Westside, speed bench is on Sunday and max bench is on Wednesday. The speed squat and deadlift are on Friday. Max effort work is on Monday. Extreme workouts can occur every 72 hours. Max effort work is a weekly plan but must be considered into a yearly plan.

Speed-strength work is done for a three-week cycle. The weight with bands, chains, or both is changed each week, normally increasing each week for the three weeks. On the fourth week, the load is decreased or changed, and again, another three-week wave is started. Why do we start again after three weeks? We found that after three weeks, one can't become faster or stronger. That is exactly why a three-week wave is used. Dr. Mel Siff informed me that Vasily Alexeev used a similar wave system for his remarkable training. Remember, he was a weight lifter and used no gear. It worked because he physically got stronger.

When squatting with different bars, each has a limit weight that has been obtained. For example, I have done 805 with a regular squat bar on a parallel box, 640 with a safety squat bar, and 675 with a 14-inch cambered bar. I mention this because when using a three-week wave with one particular bar, the same percentage will be a different amount of weight.

For example:

Squat bar:	50% = 402, 60% = 482
Safety squat bar:	50% = 320, 60% = 384
Cambered bar:	50% = 337, 60% = 405

This must be closely governed. For me, these numbers represent the weight equivalent to my max meet squat of 920. By changing bars each three-week wave, a true max meet squat can be calculated. If one breaks a personal record on, let's say, the cambered bar, a new meet record should be expected. The percents must be calculated off of the particular bar one is using as well as the contrast method used (bands, chains, or both). If weight releasers are used, they also must be taken into consideration. Note: Use weight releasers for only two-week waves. Eccentrics are responsible for most muscle soreness due to damaged muscle cells.

Speed pulls are done after speed squatting. For a three-week wave, three weight changes, one each week, can be used. The second method is to use three different band tensions starting with light bands and working up to a stronger tension band for the next two weeks. If a contest is the goal, a reverse wave must be used. Simply start with the strongest tension and reduce band tension each week for three weeks.

The top benchers I have talked to reduce bar weight or band weight as the meet approaches. This builds a greater rate of force development. This is part of the delayed transmutation phase, working with the maximal effort work. Remember, each week change the bar speed by altering the amount of chains, bands, or weight releasers, or a combination of all three.

I have covered speed work and max effort work, but what about GPP? For squatting, John "Chester" Stafford rotates box squats with and without added weight. He also does sled pulling for the upper or lower body, the reverse hyper machine, glute ham raises, abdominal work, and band work. For band work, he does 1–2 extra workouts a week. The workouts are 20–30 minutes long. He does band leg curls for about 60 reps in 2–3 sets followed by good mornings (arched or rounded back) for 2–3 sets. Then, he performs pull-throughs for three sets of 15 reps. The combinations are endless. After 7–10 days, he starts a different complex.

Remember, the conjugate system is employed for speed work, max effort work, and extra workouts for strength development or GPP. Don't forget about restoration methods. They must be included as well. Water therapy, massage, spinal adjustments, acupressure, and acupuncture can be constantly rotated throughout the year and divided into weekly and monthly plans.

Seventy percent of the world is covered by water. It is constantly moving in waves. Some are just ripples while others are as large as tsunamis. Yet they somehow are coordinated together sometimes by the seasons just as our training is. It is truly very natural to train in waves if one just thinks about it in a systematic way.

When people come to Westside, they witness all the stages of training for an upcoming meet—the training just preceding a meet and the training months before a meet. They also get to see how a particular type of training is utilized. Anyone training for a meet has undergone some form of periodization. Unfortunately, most have misused a system in order to peak for a meet. Progressive gradual overload, or Western periodization, is based on a hypothetical goal. So at any time the percent of your contest max may be off by as much as 20%. Many times the lifter is missing

weights three weeks from the contest. This is because their expectations are too high or possibly too low.

Training should be calculated by using a formula based on math, not dreams. I suggest everyone read books on periodization by noted authors such as Tudor Bompa or Vladimir Zatsiorsky. These books explain periodization in terms of micro- and mesocycles. After all, periodization is a reference to the division of training into a yearly plan or even a four-year plan (i.e. an Olympic cycle). This system is used for weight lifting, powerlifting, and track and field, and of course, should be used for all sports requiring the development of power.

The former Soviet Union had so much data on training that they did not know what some top coaches were doing. Mel Siff (*Supertraining*) asked how I arrived at our three-week pendulum system. It was quite similar to that used by the great Soviet Union SHW champion, Vasily Alexeev. I said that after three weeks we could not become faster or stronger so we waved back down and started over. Mel said that Alexeev found the same to be true. So with the help of Russian and Bulgarian research and that done at Westside with over 70 Elite powerlifters plus feedback from some of the greatest powerlifters around the world, our loading is based on AS Prilepin's table.

For speed work for benching, we do nine sets of three reps. This is known as the dynamic effort method. Its purpose is to build a fast rate of force development. For squatting, the sets vary from 12 without bands or chains (i.e. a contrast method) to as low as three for the last week of a circa max phase. The reps are always two. For speed pulls, the reps are one and the sets are 5–8.

The power clean and snatch are commonly used to develop speed-strength in high schools and colleges, but the power lifts can be used for the same purpose. For the bench, the bar speed should be a minimum of 0.75 meters/second (m/s) and a maximum of 1.0 m/s. Jeremiah Meyers and John Stafford have pulled 495 at 1.2 m/s for sets.

To find your total loading volume, multiply the sets by the number of reps. For example, nine sets of three reps for benching with 200 lbs on dynamic day is 5400 lbs. One should always use chains or bands to accommodate resistance and help reduce bar deceleration. For squatting, 12 sets of two reps with 500 lbs is 12,000 lbs. Only training sets should be calculated. At Westside, we follow the "rule of 60%." An extreme workout should occur every 72 hours. The max effort day will be about 60% of the dynamic day. This may sound easy to do, but stop and add the weights used on max effort day using weights of 70% up to max weight lifted and you will be surprised how low the total volume is. We lift about 45–50% on average. The rule of 60% was introduced through Olympic lifting. Powerlifting training requires one to make much larger jumps. This makes it almost impossible to lift 60% of the total volume on max effort day.

At Westside, we don't use the method of heavy efforts where two reps of multiple sets are used. Using the conjugate system, we try an all-time max each week on a special core exercise. If you repeatedly use the same core exercise, you will regress if you're training above 90% of a 1RM.

The conjugate system was first used at the Dynamo Club in the former Soviet Union. They had 70 highly qualified lifters from whom to gather input. At Westside, we have had over 70 Elite powerlifters who have provided data over the years in addition to many highly skilled athletes from all sports just like at the Dynamo Club. The training can't be a flat loading system. That is, the volume can't be the same when the intensity goes from a low of 60–70% to a high of 90–100%. Through years of experience, it is known that to gain better results, one can increase

the training load. This can be done by increasing the number of workouts, increasing volume, and raising intensity, making the workouts more complex through special exercises.

Periodization plays different roles in training. At Westside, we use a three-week pendulum wave. After three weeks, we failed to become stronger or faster. To use the wave, go up in bar weight for three weeks using 8–10 sets with the suit straps down. Base the weight on a contest max. Use 50%, 55%, and 60% over the three weeks. Then wave back to 50% the following week. Using weights based on a box squat max, use 75%, 80%, and 85%. For a preparatory phase that lasts nine weeks with a safety squat bar max of 640, it looks like this.

First wave: light band, 70 lbs of tension

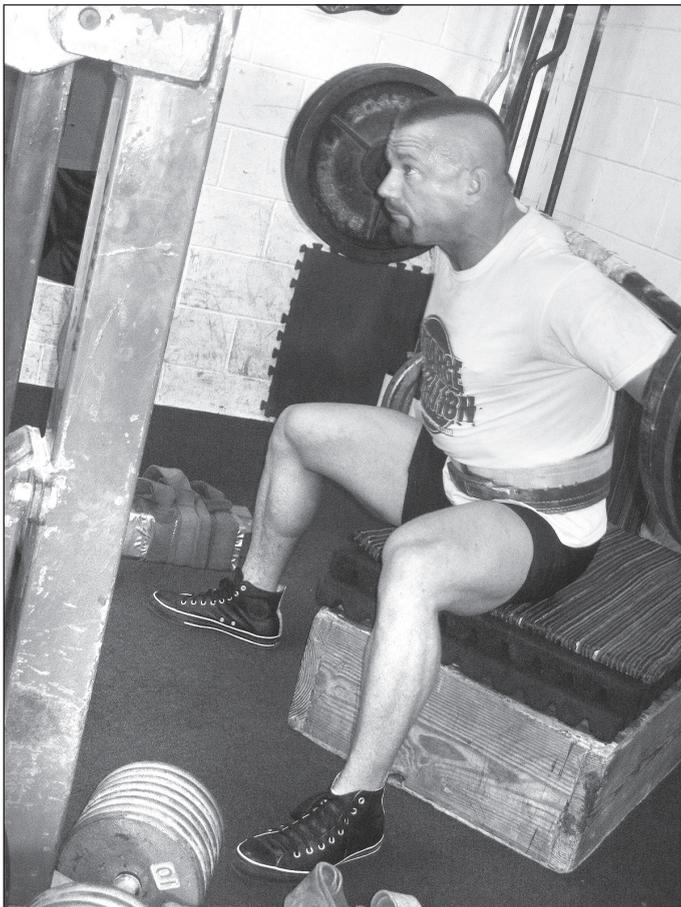
325	10 sets 2 reps
375	10 sets 2 reps
415	8 sets 2 reps

Second wave: medium band, 140 lbs of tension

325	10 sets 2 reps
375	10 sets 2 reps
415	8 sets 2 reps

Third wave: strong band, 260 lbs of tension

325	8 sets 2 reps
375	8 sets 2 reps
415	6 sets 2 reps



You can switch bars to a 14-inch cambered bar, front squat bar, MantaRay, or a regular squat bar for a three-week wave, increasing bar weight, chain or band weight, or a combination. For the strength-speed cycle, a rule to follow is two weeks. To do this, use about 50% band tension and 50% bar weight. Joe Bayles did a two-week wave for strength-speed with 520 lbs of band tension and 505 lbs of bar weight on a parallel box using four sets of two reps on week one and three sets of two reps on week two with 545 in bar weight and 520 in band tension. Going longer than two weeks for strength-speed is too taxing on the CNS.

For speed-strength, Chuck Vogelpohl uses 440 lbs on the bar plus 110 of band tension on the box and 260 lbs of tension at the top.

This is done for a three-week wave for ten sets in the first two weeks and eight sets the third. The bar weight goes to 480 for week two and 520 for week three. A speed-strength cycle precedes a strength-speed cycle. A speed-strength cycle should precede a circa max cycle. With two major meets a year, a circa-max wave will last three weeks. The bar weight is 47.5%, 50%, and 52% of your contest best with 40–45% band tension.

Week 1: 435 x 5 sets of two reps plus 440 lbs of band tension

Week 2: 485 x 4 sets of two reps plus 440 lbs of band tension

Week 3: Work up to a max single.

“Dollar Bill,” a 308, and Phil Harrington, a 181, have done 600 lbs plus 375 lbs of band tension to squat 900 and 905, respectively, at a meet. Phil’s 905 was a world record at 181. These results are very reliable. The math reveals that your contest squat is about one-third higher than your box squat max with the suit straps down and no knee wraps. The results will vary about 3% either way. Greg Panora made a box squat with 645 plus 440 lbs of bands to squat 1000 at 238 and total 2485, a world record at 242. The larger the squat, the greater the band tension must be. The band tension must be great on the box as well.

We use a two-week wave for a circa-max cycle if three large totals are attempted in one year. Greg won the 2006 APF Nationals with an improvement from 2255 to 2369. In September, Greg made a 2485 total. For the September meet, he did 505 for two sets of two reps and 555 for two sets of two reps with 440 lbs of band tension on week one. For week two, he worked up to 645 with 440 lbs of band tension. He squatted 1000 lbs at the meet, a 60-lb PR. Remember, you must have good form on both a box and contest squat and be mentally prepared as well as in a highly trainable state.

Training for a meet will take its toll on anyone. A period of 1–2 weeks to download the total volume and intensity must occur. This period is referred to as the delayed transformation phase. Don’t take heavy weights 1–2 weeks before a meet. All this does is show a lack of confidence. If you are worried about your opener, you must be scared to death to take a third attempt in front of real judges.

For benching on the dynamic method day, every three weeks change the reactive method that you use (e.g. stronger bands for three weeks, more chains each week for three weeks, or added weight to weight releasers each week). The bar weight must stay the same. For speed deadlift pulls, the bar weight is 50% of your max deadlift and 30% band tension at the top. For deadlifts, the band tension remains the same, but raise the bar weight slightly for three weeks and then return to the original weight. The max effort for improving the squat, bench, or deadlift must be rotated each week. A one-week plan is always used for max effort day. The conjugate system was intended for highly skilled lifters, but at Westside, when we start a new lifter who shows promise, he is placed in one of our groups and trains just like the advanced. It has yet to fail.

One-week and three-week cycles are arranged to produce high results at meets where they count. A yearly plan must be divided into one-week and three-week plans to fit a year of competition. It doesn’t matter how strong you are before a meet or after a meet. It counts only on meet day. With 13 lifters with totals above 2300 and five over 2500, our system has served us well.

Intensity Zone Loading

A loading plan is necessary if one intends to reach the top in any sport, including powerlifting. The training plan must be divided into micro-cycles of one week. At Westside, all maximal effort work is done in micro-cycles. This way we are able to do lifts of 100% or more each week simply by switching a core exercise that resembles and contributes to raising the squat, bench, or deadlift.

At Westside, we have a speed day for squatting, benching, and deadlifting. This is also referred to as the dynamic method. This means using submaximal weights with maximal speed. It develops a fast rate of force in minimal time. Dr. Ben Tabachnik has said that it is common for athletes to be adapted to quickness exercises. That must be addressed either by:

- varying intensities
- changing the apparatus you are using

We do both:

- by using a pendulum wave, mostly with 50–55–60%
- changing part of the resistance by adding chains or bands

This is essential to completely developing speed-strength (i.e. starting and accelerating strength).

Controlling Volume

With the progressive overload method, it is virtually impossible to control the volume. But, if you train at the 1% range, it is easily controlled. To squat 600, we know that a total volume of 7200 lbs is needed. This is arrived at by using a top percent of 60% and a lower percent of 50%. For example, 50% of 600 = 300 x 12 sets of 2 reps = 7200 lbs. On week three, the weight is 60% of 600 = 360 x 10 sets of 2 reps = 7200. A volume of 9600 is used to squat 800 so 50% of 800 = 400 x 12 sets of 2 reps = 9600 lbs and 10 sets of 2 reps with 480 (60%) = 9600 lbs. This works for any squat of any weight. This is called flat loading. During the three-week wave, you also rotate special exercises such as glute ham raises, pull-throughs, and the reverse hyper. In week one, you are unfamiliar with the exercise that will promote a bigger squat so the volume is understandably low. By week three, you have grown familiar with the exercises and the volume grows. One can't succeed by doing only the classical lifts. One will cease to make progress. The greater the lifter, the more tasks you need to stimulate progress.

Progressive gradual overload accomplishes only one goal at a time while actually detraining the phase you just completed in as fast as 2–3 weeks. In addition, after a contest, you must start over exactly where you started. But the system Westside has adapted from the old Soviet system allows you to build muscle mass, speed, and absolute strength; perfect form; raise your GPP; increase your flexibility; and practice restoration all year long year after year. We raise all qualities gradually, never neglecting one for another. I am in no way criticizing the doctorates in the United States. It is the material in the textbooks that is terribly outdated and perpetuates the

truth when it leads nowhere, just like my dog Jackie's tail chasing. I suggest reading books such as *Supertraining*, which contains the ideas of many well-respected foreign experts on strength qualities.

Speed Training

At Westside we have a speed day for squatting, deadlifting, and benching. This is also referred to as the dynamic method. That is, we use submaximal weights with maximal speed. It is designed to develop a fast rate of force in a minimal time.

Dr. Ben Tabachnik has said that it is common for athletes to become easily adapted to quickness exercises. This must be addressed either by varying intensities or by changing the apparatus you are using. We do both by using a three-week pendulum wave, mostly with weights of 50%, 55%, and 60%. This also entails changing part of the resistance by adding chains or bands. This is essential to completely develop speed-strength (i.e. starting and accelerating strength).

Off-Season Training

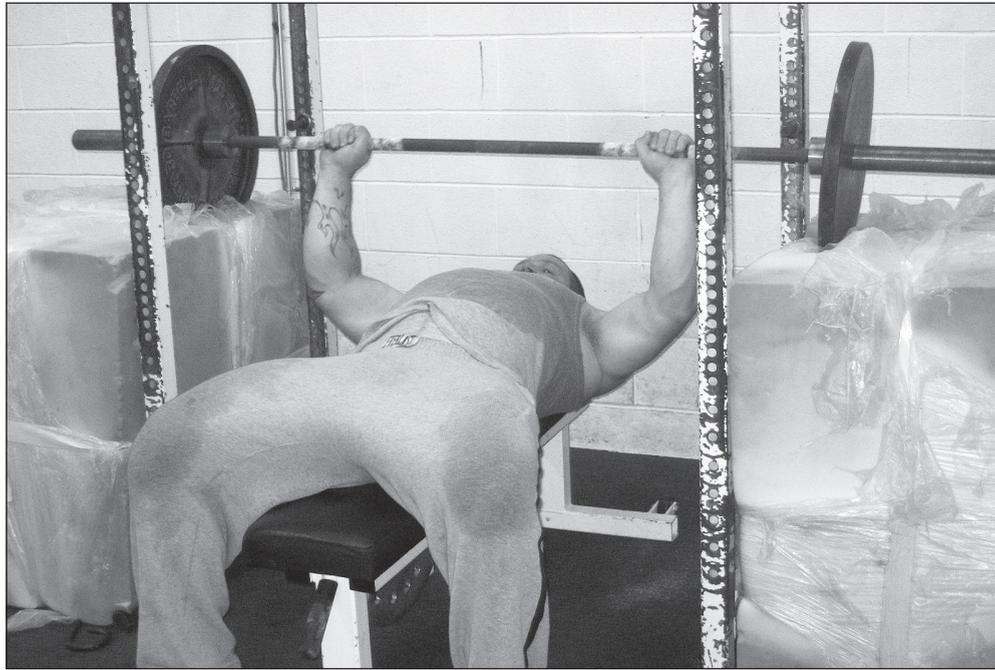
I have been asked many times what we do in the off-season. However, we don't have an off-season. This would waste part of the year's training. We are a private gym and only powerlifters train here, with the exception of NFL prospects or sports teams that come to visit from around the world. But the fact is some groups are always training for a meet. This means that their training partners must train with them regardless of their level of preparedness.

I copied the Bulgarian system for our max effort days. Just like the Bulgarians, we like to max out on an exercise that we have established a record on such as the floor press, safety squat bar,



low box squat, or pin two rack deadlift. We may not be able to set a new record, but we do as much as we are capable of on that day. I am talking about the lifter who is going to the meet and also his training partners, who are not going to the meet. I believe this is the main reason why our group at Westside is so strong.

If you stop training for two weeks, you can possibly lose 10%



of your strength. Who can afford to do that? A 1500-lb total would mean a reduction of 150 lbs. A 2300 total would show a loss of 230 lbs. We can't afford this. Can you?

Unlike the top Bulgarians, we do several exercises with which we can max out but very seldom the three competitive lifts. We do squats with many different bars

(safety squat bar, Buffalo bar, and cambered bars) and with different apparatus (MantaRay, front squat harness, bands, and chains). For benching, it's the same process. Any of the following are done: three- or five-inch cambered bar, EZ curl bar, dumbbells at different angles, board press with 1- to 5-boards, benching with five different band tensions, full range band press, full range chain press with 3–5 sets of chains, benching with the lightened method, foam box pressing with real weight, and bands over the bar.

Our deadlift training is coupled with our squat training. Rack pulls, band pulls, lightened method deadlifts, and a variety of good mornings are used. Remember, when training with those who are going to meets and going through the circa-max phases, the other training partners must train along with them. The lifters who are not competing sometimes are training harder than those who are because of their level of preparedness. One can't be at his or her best at all times, but one must train as hard as possible all the time, year in and year out.

We must always raise our general physical preparedness. This is a must if you want to reach the top in any sport endeavor. The training must be very dense. This simply means that one must accomplish a lot in a training session with short rest periods.

Martin Rooney said a pyramid is only as tall as its base. This is also true in any sport. Too many pay attention to special strength preparedness and not enough to general strength preparedness. This means that many of our max effort days are devoted to special exercises such as sled pulling. We do a wide variety of sled pulling such as walking forward with the strap hooked to your power belt, walking backward with the strap hooked to your power belt, walking forward with the strap held in your hands at knee level or lower, and walking forward with the strap held in the hands doing pressing motions, curling, pec work, or static holds in all positions. Upper body static holds will build upper body size because you can breathe while holding statically for long time periods. This is great for football or hockey. You can also walk backward doing high pulls, upright rows, bent over rows, or external rotation exercises. We also do chins and dips. We have a machine that reduces your body weight while you do these exercises.

We try to build muscle mass all year long as well as work on explosive speed and absolute strength. In addition, we work on perfecting form in all three lifts. In a yearly plan that truly

works, one must increase speed, work capacity, and of course, absolute strength. With the conjugate method, all this is possible. There is truly never an off-season if you are aiming for greatness. If you don't train for two weeks, your strength can drop 10%. If you don't do sled work for two weeks, your work capacity will fall greatly. Even your flexibility will suffer if not maintained.

Advanced System for Beginners

I hear all the time that Westside training is for the advanced and those only top ten lifters can do the training that is required at Westside. It is true that our training is advanced, but it is also great for beginners. Why start out wrong or start with a program that will yield only small results?

Our stats show that we have developed 63 Elite lifters. Many of those got their start at Westside and became world record holders including Heath, Patterson, Fusner, Dimel, Halbert, and Vogelpohl as well as many women. It's true that we have many advanced methods for all ages. It's also true that I totaled Elite in five weight classes, all USPF meets, and had never heard of chains, bands, circa-max, pendulum waves, or delayed transformation. However, I had the commonsense to read and learn.

What Chuck Vogelpohl did to make his first Elite total in 1988 is the basis for what he does today. Because the Westside system is mathematical, it is based on a percent of your limit strength. It can be used by a 300 squatter or a 900 squatter. They would both train with the same percent. They would use a three-week pendulum wave. The percents range from 50–60%. A 300-lb squatter would use 150–180 lbs on speed day:

- Week 1, 150 for 12 x 2 reps
- Week 2, 165 for 12 x 2 reps
- Week 3, 180 for 10 x 2 reps

These weights will ensure correct form. It is a must for beginners to learn how to do power lifts with proper form. This will build speed-strength, a very important element of total strength development and best taught early in the career. Short rests (45 seconds) between sets are used. This is the interval method. The short rest will build general physical preparedness (GPP). It will also build mental toughness. For the novice, it is important to build the weak links in the chain. If this is not addressed at an early stage, poor form, or worse, injuries will occur. This will certainly cut a career short. Much of the training volume should consist of special exercises. If your squat stops making progress, more squatting will not help. You must work the muscle group that is lagging.

A novice must have good coaches. Notice that I said “coaches,” not “coach.” When a lifter reaches a high standard, it does not mean he can coach. At Westside, we have many great lifters who rose from nothing to greatness. As I taught the Westside training system to our lifters, they were learning what constitutes good form, what volume to use, and what exercise is best for a particular body type. In essence, I taught them to lift as well as to coach. Every lift is thoroughly coached at Westside. We constantly analyze each other before something becomes a problem.

It is important for beginners to learn everything about training. At meets, our new lifters all have good form. This is not the case with most beginners at meets. We insist that beginners squat

wide and bench close. This ensures that the correct muscle groups are developed. For squatting, it's the posterior chain—the hamstrings, glutes, calves, and spinal erectors. Someone with little knowledge will try to build the quads to increase their squat. But this will reduce hip flexion, resulting in difficulty reaching a parallel position in the squat and destroying the lockout in the deadlift to the point where they can't make the top 100 in the weight class below them.

When we bring a new face in, we don't try to train his squat like Chuck trains today but rather how he started out plus chains. We update our training continuously. No longer do we use a five-week wave but rather a more efficient three-week wave. In Chuck's early stages, he used 50–60% for a three-week wave. For example, when Chuck's squat was 600 at a meet, he would do the following:

- Week 1: 50% (300) for 12 sets of 2 reps, 60 seconds rest
- Week 2: 55% (330) for 12 sets of 2 reps, 60 seconds rest
- Week 3: 60% (360) for 10 sets of 2 reps, 60 seconds rest

On week four, Chuck would start over at 50% and repeat the three-week pendulum wave. As his meet squat increased, his workload would slowly increase. When Chuck could squat 600, his squat volume was 7200 lbs: 300 (50%) for 12 sets of 2 reps = 7200 lbs; 360 (60%) for 10 sets of 2 reps = 7200 lbs. When Chuck's squat was 700, his volume was 8400 lbs: 350 (50%) for 12 sets of 2 reps = 8400 lbs; 385 for 12 sets of 2 reps for week 2; and 420 (60%) for 10 sets of 2 reps = 8400 lbs. It took 1200 lbs of squats to push his squat from 600 to 700.

When Chuck made his first 800 squat, the work load looked like this:

- Week 1: 400 for 12 sets of 2 reps = 9600 lbs
- Week 2: 440 for 12 sets of 2 reps to raise volume
- Week 3: 480 for 10 sets of 2 reps = 9600 lbs

When training at 50–60%, the work is equal for all. Up to this point, Chuck used three sets of 5/8-inch chains placed correctly on the bar (see the reactive methods video). As you can see, he slowly raised his squat volume systematically, along with other special exercises including the reverse hyper, pull-throughs, back raises, abs, lats, and sled pulling. Chuck's extra workouts went from one a week to four over the course of five years. The extra workouts raise work capacity and increase flexibility, mobility, general physical preparedness, and special physical preparedness (SPP). A beginner should use chains to accommodate resistance. This builds a strong start to enable one to overcome the additional resistance that the chains provide. Chains will also help eliminate bar deceleration. This program can be used for someone who squats as little as 100 lbs. Remember, it is based on percents of a 1RM.

Chuck's squat was 865 when we introduced bands to his training. After a year, his squat jumped to 1000 at 220 lbs, but this was after many years of intense training. It's simple. Chuck raised his work capacity through box squats, special exercises, extra workouts, and restoration work. I started Chuck out at the beginning. He was not born squatting 800 but systematically rose to world record status. Someone who does not squat three and a half times their body weight

should not do the circa-max phase, nor do they need a three-week delayed transformation phase. At Chuck's first meet (1986), he totaled around 1600 at a light 220. Today, his total is 2319 plus best lifts of 2419 in the same weight class. This is a portrait of training adaptation. Not only is the volume increased but also the training has become much more sophisticated. The form in all lifts is constantly improved.

Everyone likes the bench so let's look at George Halbert's history at Westside. We saw George bench in Columbus for two years and make zero progress. He was stalled at 475 during this time. We convinced him to join us. Like most beginners, his bench form was terrible. It took a couple of years to correct it, both with technique and exercises. George's pecs were much stronger than his arms. We changed his arm position and concentrated on his triceps. After one year, his bench jumped to 628 at 275 body weight. He learned from Chuck to watch his diet, came down to 198, and set the world record three times in one meet ending with a 683. This was done mostly with chains.

At first, George was taught a lot of exercises. Later on, he began to teach us, much like Chuck did in the squat and deadlift. I have many books about training adaptation, but at Westside, I have watched it as well as participated in it. George started at the lowest level and started over but correctly this time. Like any beginner, he started doing lots of triceps so they would do their fair share and take the pecs out of the lift. He found out how to push the bar straight up and eliminate pec pulls and shoulder problems.

If you follow the writing in *Powerlifting USA*, you will see that the training constantly changes year after year. Training has become much more complex, but it's much easier today than 15 years ago. We have eliminated the useless work, and as we have gathered more information, it is much easier to progress. The poundage barriers have fallen. In our gym, 700-lb benches and 1000-lb squats are common.

It took George Halbert several years to go from a 500 bench to 700, yet Paul Keyes, a newcomer who trains under George, went from a 585 bench to 750 in an astonishing 51 weeks. He's still progressing. Matt Smith came to Westside with a meager 1800 total. In four years, he took that to 2400 by training under our more experienced lifters. Now, Matt has totaled over 2500. Matt's training made it possible for the astounding progress of SHW Tim Harold. Tim went from 1800 to 2400 in two years. What we learned from working with Matt made it possible to take a novice to prominence at the tender age of 20. This made Tim the youngest to bench 700 and total 2400.

I hope those reading this can clearly see that Westside uses an advanced system for the beginner. Why start out wrong? Or why do the same program for years just to total the same numbers?

Westside teaches correct form, how to raise GPP and SPP, how to raise work capacity, how to teach others, how to know when to wear stronger gear, how to separate different types of training and to know the effect of a particular training load, how to find the proportionate training load that matches your maximum strength, and how to organize training for an annual goal.

We have developed 63 USPF Elites at Westside, many participating in their first meet under Westside's supervision. If only I had the advantage of starting out under Chuck Vogelpohl, George Halbert, Joe Bayles, Matt Smith, Mike Ruggeira, and so on. In the 1970s, it was Tom Paulucci, Doug Heath, Gary Sanger, and Bill Wittaker who helped orchestrate the early Westside

system. Then in the early 1980s, I turned to the top former Soviet sports scientists such as V Zatsiorsky, T Bumpa, A Medvedev, P Komi, N Ozolin, AS Prilepin, R Roman, and of course, Mel Siff, whose *Supertraining* manuals have brought much to the United States. Even though we have rivals, we can learn from everyone. Bill Crawford has done several seminars for our lifters. Jesse Kellum has offered much to use, and Bill Gillespie has voiced his views on benching several times.

Beginners should learn form first and then add chains and later on bands. There should be no circa-max squatting until you can squat three and a half times your body weight. Learn to use light equipment and then graduate to stronger gear. Lift in positive federations or you will be frozen in time just like they are. There is no reason that a beginner should not start with an advanced system. Everyone sends his son to Bobby Knight's basketball camp. I've seen lots of lifters come and go. Don't be one of those. Start right and you won't incur injuries, fail to make progress, or be forced to stop lifting.

WESTSIDE BENCH PRESS TRAINING

Everyone strives for a goal, one of which may be a 500 bench. The problem is how do you achieve it? For me, it was a mystery until I discovered a method of training known as the conjugate method.

Dynamic Effort Day

On Sunday, we use the dynamic method. We do 8–10 sets of three reps. It's best to use three or more grips in a workout. Most of the sets are done with a grip inside the power rings on the bar, or with the little finger inside the ring. Using grips inside the rings will aid greatly in triceps and anterior delt development. The reps must be very explosive. Lower the bar quickly but with control. Lowering contributes to raising concentric strength. Lowering a bar slowly will build muscle mass but not strength. After all, plyometrics is the energy gained by the body dropping and then responding to that dropping with reversal, or explosive, strength. The bar should be pushed back up in a straight line, not back over the face. This requires strong triceps. This path is a shorter distance and requires no shoulder rotation, which is also much safer. The barbell will always seek the strongest muscle group. That's why most push the bar over the face. Their delts are stronger than their triceps. But it should be the reverse. One sees a lot of shoulder and pec injuries but seldom do you see a triceps injury. Why? The triceps have never been pushed to their maximum potential. We do approximately 20 reps out of 200 above our training weight. We may add only 30–50 lbs to the bar, mainly to check that bar speed remains high. If the bar speed or reversal strength slows, you have a problem.

After bench pressing, go first to triceps work. Basically 60 total reps are done with dumbbells broken down into five sets of ten reps or possibly seven sets of eight reps. The palms should be facing inward toward the body when dumbbells are used for extensions. When a barbell is used, 40 reps should be done, bringing the bar to the forehead, chin, or throat. We do a lot of JM presses, named after JM Blakely. With a close grip, lower the bar 4–5 inches off the chest above the nipples, hold for a split second, and press back up. This is a very effective exercise.

After triceps, do front raises with a bar, plate, or dumbbells. Use heavy weights. Also, do side delts with dumbbells or a cable, rear delts, 4–5 sets of lats, and a few hammer curls. Do delt and latwork by feel but continuously do more and heavier weight. This workout is done on Sunday and should last no longer than one hour and ten minutes.

Here are a few examples:

Speed bench with bands: These should be done for 8–9 sets of three reps. Use 45% of your 1RM on the floor press. The bands should provide 40 lbs of tension on the chest and 85 lbs of tension at the top.

Speed bench off power rack pins: Set the pins at chest level. Lower the bar to the pins, relax for a second, and then blast the bar to completion. This is relaxed overcome by dynamic work. Use bands or chains.

Buffalo bar: The same can be done with a Buffalo bar. It has a two-inch camber. Bill Gillespie of the Seattle Seahawks used this method and the previous one to their fullest and so far has a 782 bench in a single poly to prove it.

Floor press: Chuck Scherza uses the floor press for his dynamic work. His bench has gone from 525 to about 700 with this method. By the way, Chuck had triceps surgery after he did the 525 bench.

Incline or decline press: Incline and decline press with a bar can also be used. Use jump-stretch bands to accommodate resistance and to build starting and accelerating strength. You can even use bands with dumbbells by placing the band around your back and looping the ends over your palms before you pick up the dumbbells like Clay Brandenburg does.

Lightened method: This is done by attaching bands at the top of a power rack or Monolift to reduce the bar weight at the chest. We attach jump-stretch bands at the top of a seven-foot rack. Blue bands reduce the weight by 150 lbs at the chest, green bands by 95 lbs, and purple bands by 65 lbs. Chains can also be used.

Maximum Effort Day

On Wednesday, the workout is called the maximum effort method day. When using a barbell, do singles. Naturally, work up slowly but always try a new max. We do many exercises on this day that resemble the bench press but are not regular bench presses. This is known as conjugate training. After doing an exercise with weights over 90% for 5–6 weeks, your strength will regress. We train at 100% plus all year long by changing a barbell exercise every 2–3 weeks. The lifters at Westside are constantly going to meets. Many of the meets are small and mostly in Ohio. We like to represent Ohio. Top lifters should lift in their respective states to entice new talent into the sport.

We also attend the biggest meets such as the APF Senior Nationals, IPA Nationals, IPA World Cup, WPO Bash for Cash, WPO Show of Strength, and the WPO Finals at the Arnold Classic in Columbus, Ohio, our home base. While the squat used to be a crap shoot, it's now the bench that causes the most bomb-outs lately. Sometimes the shirt is too strong. Sometimes the lifter is too weak. Confidence will make you a champ while overconfidence will make you a chump. We must come to grips with the fact that bench shirts are here to stay. Some prefer to lift "raw." If one has a sense of history and remembers names such as Mike MacDonald, Larry Pacifico, Jeff Magruder, and of course, Jim Williams (675 in 1972 at SHW), the truth is that what people think is that good raw benching today is mostly pretty sad. But what does it take to bench a personal record at contest time? Many things come to mind. The first is methods of training. There are three standard methods of training.

Dynamic method:

Here, one uses submaximal weights with maximum speed. This method teaches the lifter to display explosive strength and improve the rate of force development.

Maximum effort method:

This is defined by lifting the heaviest weight possible for one rep with no time limit or without a large emotional stress, meaning a training max not a contest max. At Westside, the above two methods occur 72 hours apart.

Repetition to near failure:

Westside lives on special exercises but reps are done to near failure for triceps, lats, and delts. These are basically the muscle groups used in the three lifts.

The problem today is the popularity of bench shirts and their ability to raise one's bench considerably. There are some who will only do shirt work, or that is, band pressing with a bench shirt. The lifter will set the shirt to barely touch 3-boards and then adjust it to touch 2-boards. Finally, they will crank the shirt to maximally work on 1-board. In our gym, George Halbert's group did just this for months only to discover that it didn't work. They became very good on board pressing with a shirt only to find that they had no groove, or even worse, the ability to touch their chest. This resulted in a lot of bomb-outs. At our gym, 20 feet away from George's group, a second group tried the same routine and came to the same conclusion. This time, four top lifters had miserable results. Only one out of four made a bench, and it was 70 lbs under his best. Why? Using a bench shirt is not max effort work. The shirt is doing the work, not the lifter. Remember the three main methods of training? The shirt work replaced max effort work but not really. All of a sudden, they couldn't lock out weights that were easy before. Some did not do speed work.

The dynamic method is not intended to raise maximal strength but to teach you to display explosive strength and improve the rate of force development. Zatsiorsky explains this in *Science and Practice of Strength Training*. I have heard many say that speed is not important. This is incorrect thinking. A particular lifter has only so long to complete a max lift. You will fail to lift more weight when your muscles are contracted for a given time limit. The sprinter can only sprint so far before decelerating. The top sprinters accelerate a longer distance than a novice sprinter. The stronger a man or woman is, the shorter period he or she can exert maximal force. This is why speed and acceleration are so important.

When using a shirt in training, it takes a long time to work up to a max. Remember, your testosterone will drop rapidly after 45 minutes. This is why dense training is a must. Dense training refers to how much training is done in a particular time limit versus how much rest is taken during the same time limit. When putting a shirt on and taking it off, actual training time is limited. This results in little time for exercises for the triceps, delts, pecs, and lats to be done. One must learn to use a shirt, but one must learn to touch the chest. Bill Crawford says that you must touch the chest.

I suggest that instead of board pressing with a bench shirt have a shirt that you can touch 450 and establish a max record in that shirt such as 510. Next, use a shirt that allows you to touch 500 and possibly a max of 570. Finally, use a shirt that allows 550 and find your max with that shirt, which I'm guessing is maybe 625. A bigger benchner would use three stronger bench shirts. A lesser benchner, say a 400 max, would do the same with a weaker set of shirts. Today, anybody can achieve a big bench fast due to the perfection of bench shirts. However, soon after your bench

tops out, you must become physically stronger. If you don't, you will disappear from the power scene. The answer is, of course, to learn how to use a bench shirt but also to learn to raise your natural strength.

George Halbert has set 11 all-time world records in the bench in three weight classes yet recently made an all-time gym personal record of 625 without a bench shirt prior to making 746 and 766 at Kieran Kidder's Bash for Cash in Orlando in September 2004 during a hurricane. Fred Boldt, at 181, made 597 in Orlando with George. He also made a 622 world record only to have it turned down for a technicality. George and Fred both do shirt work on the chest in the gym. As a second and more successful experiment, Joe Bayles, who had a 630 bench, made 700 lbs in a full meet and totaled 2325 at 242. Mike Brown, at 19-years-old, made a 735 bench and totaled 2300 in his first meet at 295 body weight. Tim Harold hit a 715 bench and totaled 2455 at SHW at 20-years-old. Zach Cole went from a 575 to a 600 bench at 276. This group did shirt work off their chests. Most of the board work was done without a shirt. Joe made a 605 2-board press with no shirt prior to his 700 at the IPA Nationals in 2004. Nowhere have I read that wearing a bench shirt is max effort work. The shirt is doing the work, not the muscular system of the lifter. In fact, your true max strength will decrease as we discovered.

Recently, I have seen four lifters break their arm doing a contest bench. I believe this is due to training shortcuts. As one buys a stronger bench shirt, they neglect to train harder to become stronger. Something has to give, and it is the lifter. So if you are going to spend a lot of cash for a shirt, try spending some time getting stronger. Musashi Miyamoto said that to do nothing is worthless.

Floor Presses

Lower the bar until the triceps are completely on the floor and relaxed before pressing the bar up.



By relaxing the arms, you break up the eccentric/concentric chain. This will build explosive strength as well as the bottom part of the bench press.

Board Press

Board presses will build the middle part of the bench press. Lay 2-3, 2 x 6s on your chest, bring the bar down to the boards, and press



back up. This is much different from a rack press because the weight is transferred on to the chest, shoulders, and arms. When using 3-boards, use a close grip, with the index finger just touching the smooth part of the bar. With 2-boards, place your little fingers on the power rings.

Rack Lockouts

We use many pin positions all at the top.

The bar will move 4–5 inches on the top pin and 10–12 inches on the lowest pin. Always use a close grip. Never lower the weight. Instead, press the bar off the pins concentrically.

When dumbbells are used for incline, decline, floor, seated, or regular presses after a warm up, go to a heavy weight such as 110s and try a rep record. The rep range should be 15–20. This is known as the repetition method. You must go to failure. Weighted push-ups with the feet higher or lower than the hands are done the same way. Warm up and max out with a 25-, 45-, or 100-lb plates on your upper back or have a training partner sit on your shoulders facing the same direction. Dumbbells and push-ups also act as a hypertrophy aid. Illegally wide bench presses, an inch or so outside the power rings, will act as a strength and muscle builder when a six rep max is established for a 2–3 week mini-cycle. Always keep the elbows tucked in. Note: A six rep max means the most weight one can get for six reps after a warm up.

Do one core (above) exercise per week followed by 4–5 special exercises total for the triceps, delts, upper back, and lats. Always push up your special exercises. Key notes: It is not necessary to do a max bench press to develop absolute strength. All that is required is to place the muscles in a situation that involves strong contraction for a period of time that duplicates the time in which a max bench press is performed. This works best through maximizing a certain portion of the lift (bottom, mid-way, or top) using the maximum effort method. Fast lowering, or the eccentric phase, of a bench press will produce momentum that is converted into kinetic energy that aids in raising the bar back to arms length. Floor presses, like box squatting, will build explosive strength by overcoming a static position through active or dynamic, work. Don't pause the bench press in training. This builds mainly static strength. The stretch reflex lasts up to two full seconds, much longer than a legal pause. However, do pause when doing floor presses and board presses. When doing rack presses, remember to press off a prescribed pin setting. This requires you to overcome inertia. As your triceps get stronger, add chains to the bar for bench pressing. Use 5/8 chains that are five feet long looped through a half-inch chain that is fixed

around the Olympic bar sleeve. Half of the 5/8-inch chain should be resting on the floor to start. When the bar is on the chest, all the chain should be on the floor. At this position, you have your original 55–60% of your 1RM on the bar, which is critical.

Periodization for the Bench Press

For benching, explosive and speed-strength can be developed by many methods. Here are some guidelines to follow for speed work for the bench. Rest 45–60 seconds between sets and always use proper form. Use bands, chains, or weight releasers to cause the reactive method effect. Although you pause with the floor press and pin press, never pause on the chest. While resting a bar on the chest, many of the muscles will retain tension. This will dampen the stretch reflex. When the bar is resting on pins on the power rack after the eccentric phase, the entire body can relax. Then explode like a boxer throwing a jab.

Dynamic method:

Do regular benches with 40–55% of the shirtless max. Lower the bar quickly and reverse as fast as possible to completion. Do 8–10 sets of three reps.

Ballistic method:

Use the same 45–50% load of a shirtless max. Drop the bar quickly but control it in the descent with the lats, not the triceps. Catch the bar 1–3 inches off the chest and reverse it concentrically as fast as possible.

Floor press:

Again, use the same 45–50% load of your shirtless max. Lie on the floor inside of a power rack. Lower the squat J-hooks to use as bench supports. Lower the bar until the triceps are resting on the floor and the arms are relaxed. Violently contract all the pressing muscles and drive the bar to completion. The floor press, like the box squat, allows the lifter to have some muscles relaxed and some static.

Weight releasers:

This is an explosive eccentric phase. Load the bar to a 50% of a shirtless max. Now, add weight releasers to the bar with 30% weight of your best. Lower the bar loaded to 80% at the top and after stripping the 30% off, press the remaining 50% up as fast as possible. This is a contrast method that really increases a lifter's reactive ability.

Speed-strength:

Attach a 4x4 under each side of the power rack and loop mini-bands underneath it. Stretch both ends of the mini-bands under the bar. Do eight sets of three reps and lower the bar as fast as possible.

Strength-speed:

Use two mini-bands in the same manner as above. This may sound light, but for the development of strength-speed, bands are much harder than regular bar weight.

Speed bench off power rack pins:

Set the pins at chest level. Lower the bar to the pins and relax for a second. Then blast up to full completion. This is relaxed overcome by dynamics work. Use bands and chains.

Arch bar or Buffalo bar: This same can be done with the Buffalo bar or the Westside arch bar. It has a two-inch camber. Bill Gillespie of the Seattle Seahawks used this method and the previous one to their fullest and so far has a 782 bench in a single ply poly to prove it.

Incline or decline press:

The incline or decline press with a barbell can also be used. Use jump-stretch bands to accommodate resistance and build starting and accelerating strength. You can even use bands with dumbbells by placing the band around your back and looping the ends over your palms before you pick up the dumbbells.

Lightened method:

This is performed by attaching the bands at the top of the power rack or Monolift to reduce the bar weight at the chest. We attach the bands on a seven-foot power rack. Blue bands reduce the weight 150 lbs, green bands by 95 lbs, and purple bands by 65 lbs. The lightened method can also be used by using foam. It is very efficient and sports-specific.

Intensity Zone Loading for the Bench Press

The loading for the bench press is similar to that for squatting, but of course, it must be somewhat lighter due to the smaller muscle groups used. It has a dynamic method day. This occurs on Saturday or Sunday. The max effort day is about 72 hours later on Wednesday, which is the amount of time required to recover from extreme workouts. We do a circa-max phase but the de-loading phase is somewhat different.

Let's start with the dynamic method day. Here we do nine sets of three reps. The reason for this is that we use three different grips on the bench. We do three sets with the index finger just touching the smooth part of the bar, three sets two inches from the smooth part of the bar, and three sets with the little finger on the power ring. These can be done in any sequence.

Increasing bar speed is most important, not raising the bar weight. Remember Fred Boldt? He made a 495 official bench at 165 training with 185 lbs and two sets of 5/8-inch chains or a mini-band. In October 2002, he made a 540 bench weighing 163 with the same bar weight. How? A faster bar equals more force. Eskil Thomasson at 275 made a 485 bench when Fred did his 495 and a 550 at the same meet in October. They train together, but most importantly, they use the same bar weight.

In a weekly plan, or a micro-cycle, the bar loading equals 27 lifts per week. In four weeks, or a monthly load or meso-cycle, the number of lifts is 104. The percent may vary slightly but the main reasons for this day is two-fold:

1. speed strength preparation
2. developing the ability to direct one's movements correctly.

Why three reps? We set the number of reps so the lifter can still do the last, or third, rep of a set at maximal velocity. A fast descent and a fast reversal phase will increase reaction time. One must not only increase coordination and technical skill but also develop a complex manifestation of velocities:

- increasing velocity
- gathering momentum

The training percent with a combination of bar weight and bands looks like this. The bar weight is 33%, the bar and band weight at the bottom is 42%, and the bar and band weight at the top is 50%. The number of lifts per week or per month remains the same when using chains (i.e. 27 per week or 104 per month).

What about max effort day? By our own research it was found that lifts above 90% of a 1RM look like this. The last lift before a record attempt is about 90%. After a 90% lift, try a new record and possibly one more lift. This is a total of 3 lifts. For example, if your 2 board record is 500 lbs, your 90% weight would be 455, easy to load. Then do 505 for a personal record and then 510 or 520. That is all you will achieve if you are an advanced lifter.

The number of lifts will remain the same regardless if they are full-range or partial. I frequently refer to Prilepin's table, but we vary the number of lifts somewhat. Prilepin's table was calculated for the Olympic lifts, not the power lifts. I calculate the percent on dynamic day on the basis of a contest max, meaning a bench shirt max. No bench shirt is used on max effort day, but the changes in the number of lifts are due to the fact that the pressing muscles can't withstand the work that the pulling or squatting muscle systems can.

So how does the two days' loading look? The dynamic day for a microcycle or weekly load is 27 lifts. A meso-cycle, or monthly load, is 104 lifts. Note that 20% of the load should be above the normal percent. However, if the weights are too heavy, this will negatively affect max effort day. A microcycle for max effort is 3 lifts as described earlier. A meso-cycle would be 12 lifts per month. Of course, special work for the triceps, delts, lats, and upper back must follow both workouts.

Loading for Repetition—Work to Failure

For dumbbell work, we do three sets to failure with a set weight such as 100 lbs. First, warm up with lighter dumbbells. Then do a max set to failure. Rest about five minutes and then do a second set to failure. Take five minutes of rest again and do a final set. Keep a record of your one set and three set maxes. Try records in the seated, flat, incline, and decline presses and presses on a stability ball. This can be done for push-ups as well. When using a barbell, a 6RM works well. Either a close grip, wide grip, or illegally wide grip can be used.

A dumbbell or barbell rep max should be done every 4–5 weeks for two weeks in a row. A guideline for barbell work is that it should represent about 80% of a 1RM without a shirt. When using dumbbells, simply add the total reps on all three sets. As your total volume increases with the same dumbbells, your bench should go up. You can buy a better bench shirt only for so long. You have to get stronger eventually, and this will help.

Sample Bench Press Workouts

I am frequently asked to write personal workouts for a fee. However, I don't have the time to do this. Westside makes training tapes on all matters of training plus I write articles for Powerlifting USA almost monthly. This way we can reach a large audience. Besides not having the time to do personal workouts, if I can't see you in person, I can't tell your weaknesses, which could be a muscle group or bad form.

It takes years to learn the power lifts. After 13 years of training, I realized I knew very little about it even after making top ten lifts in all categories from 1972–2002. I was eighth in the bench press in 1980 without a bench shirt so I know how to raise a raw bench. I was sixth in 2002 with a bench shirt but very weak. Shortly after that, I received a new shoulder socket and had bicep surgery and a second shoulder operation. I started to understand bench press training in 1993 after 23 years of continuous training. Back then, Westside had three, 600-lb benchers who were all juniors. Now, after 25 years, I am beginning to understand more fully how to bench. As of 2005, Westside has produced 16, 700 plus benchers and one, 800 plus bencher in addition to 25, 650 plus benchers with the lightest being Jason Fry, who did 650 at 180 lbs.

The following is a six-week general program that Westside follows. Incidentally, all the men I write about train at Westside. Anyone is welcome to visit. Just set up a date because we are not open to the public. Speed work, or the dynamic method, will develop a fast rate of force. Maximal strength comes from special exercises. On Saturday or Sunday do speed work. After a good warm up, do nine sets of three reps. John Stafford's bench is 733 at 275. His weight on the bar is 205–225. This is 45% of his 1RM on the floor press. This formula works for everyone. The grips are three sets with the index finger touching the smooth part of the bar, three sets with the thumbs extending from the edge of the smooth part of the bar, and three sets with the little fingers on the power ring. You must use mini-bands or 2–3 sets of chains Westside style.

This simple method will build all major muscle groups. Press the bar in a straight line, not over the face. This is the safest way to bench. Remember, the shortest distance between two points is a straight line. Lower the bar as fast as possible to create a strong stretch reflex for reversal strength. Your speed with your worse grip should be at least 0.7 meters/second. After benching, choose a bar triceps exercise such as the JM press, straight bar triceps extension, or football bar extension for 3–6 reps per set working up as heavy as possible on that particular day. Then choose a second triceps exercise with dumbbells (e.g. extensions with elbows out to the sides or roll backs with palms facing) working up in weight or choose a weight and do multiple sets. Dumbbell reps are in the 6–12 range for 40–70 total reps.

The triceps are the prime bench press mover. They must fire first. To do that, they have to be the strongest muscle group. At the first sign of staleness, change the barbell or dumbbell exercise or both so progress can continue throughout the year. Next, do lat work. Again, choose 1–2 exercises such as barbell or dumbbell rows, chest supported rows, or lat pull-downs. Your lats help place the bar on the chest by helping you to lower the bar. Reps and sets, as for all exercises, are based on your level of preparedness. Lastly, work the side and rear delts, upper back, and biceps with hammer curls. Do pre-hab work for the pecs and rotators.

On max effort day, work up to a max single. It may not be an all-time record, but it must be a current max. Doing sets of 2–3 reps with weights above 90% is known as the method of heavy

efforts. Please remember, the volume is high but the intensity can be higher. If you train at 85, 90, or 95%, you are really only using 85, 90, or 95% of your muscle potential, not 100%. Your technique must be built by singles. Limit the top lifts after a good warm up to three. The first weight should be at 90% or so, the second near a record or just above, and then possibly one more single. For example, for a floor press record of 500 lbs, the first attempt might be 450, the second 490, and the last 505. This workout should occur on Wednesday. This allows ten days off heavy weights before meet time. This also is 72 hours from the last extreme bench workout.

I will now outline a six-week program. The sequence can change to fit your preferences, and you can add or replace the core exercises in this program.

Workout #1: Do floor press with 200 lbs of chain draped over the sleeve. Next, add weight to the bar until a max on that day results. George Halbert's best is 445 with 200 lbs of chain. This is how George works up to his best.

1. 135 plus chains for 5 reps
2. 225 plus chains for 3 reps
3. 275 plus chains for 3 reps
4. 315 plus chains for 1 rep
5. 365 plus chains for 1 rep
6. 405 plus chains for 1 rep

Try a new max or the most on this day. Then, as on speed day, do triceps, lats, upper back, and rear and side delts. A 300–350-lb raw bencher should use three sets of chains. A 350–450-lb bencher should use four sets of chains. Although anyone can use any amount of chain to set a record, you have five workouts to choose from if you use two different grips with all three chain weights.

Workout #2: Do overhead band presses or the lightened method by attaching a jump-stretch band at the top of a power rack. You can reduce the weight at your chest by 155 with a strong set of bands. A medium set will reduce the weight at your chest by 95 lbs. A light set will reduce the weight by 65 lbs. After warming up, work up to a max single.

My personal records were 580 with strong bands and 520 with medium bands. This was right on with the 60-lb difference between the band strengths. Amy Weisberger has a 370 bench and mostly uses the medium and light bands. This is very close to duplicating the value of a bench shirt without using one. Get a PR with a close grip and a wide grip with three different band strengths and two different grips. This represents five completely different workouts. Always follow with triceps, lats, upper back, and rear and side delts.

Workout #3: Do football bar presses. This bar allows the palms to face each other. We work up to a new PR for three reps or a 1RM. The bar has different width grips to choose from including close, medium, and wide. We use it by itself or with mini-bands, light bands, or a set(s) of chains. During the workout, at least two grips are used. This bar works the triceps hard. Then flat, incline, or decline presses are done. The JM press is performed at times also duplicating the groove of a bench press shirt. It is very effective, although it hits the triceps very hard. You must again work extensions with dumbbells with the elbows in or the roll back variety. Then do lat work. Always rotate exercises that work the same muscle groups but in a slightly different way. Last, do upper back, rear and side delts, and hammer curls.

Again, look at the possibilities—two different band tensions, three chain weights, and three grips to choose from adds up to eight different workout PRs to break.

Workout #4: Do illegally wide benching. Take a grip outside the power ring, wider than allowed at a contest. Work up to a max six reps. I got this from Bill Seno, a great bencher and bodybuilder from the 1960s through the early 1980s. You can also work up to an 8RM and even a 10RM. This was Bill's intention for me, but I didn't like 8–10 reps. It simply took too much energy. Sorry, Bill, but those wide 6s gave me a top ten bench in 1980. If you never trained for a raw bench, you would never know how to get one. I'm sure Scott Mendelson will have good tips for a raw bench.

On the day after benching, do dumbbells on an incline or decline for several sets. This is primarily a hypertrophy day. Most dumbbell presses are done with the palms facing each other. A few sets can be done with the thumbs facing each other because that simulates taking the bar out of the rack. As always, do triceps first, then lats, upper back, and rear and side delts. Note: We don't work front delts directly too often due to overtraining. I observed that the guys who do a lot of front delts are not our best benchers. As you can see, max effort day can be replaced with a repetition day to increase muscle mass. No one method will work. You must use all proven methods.

Workout #5: Do band presses by attaching bands to the bottom of your rack. You can build a fast start and a strong lockout. A mini-band attached to the bottom of our power rack (see the Bench Workout DVD) will add 40 lbs at the chest and 85 at the lockout. A monster mini-band will add 50 lbs at the chest and 110 at lockout. A light band doubled up at the bottom will add 100 lbs at the chest and 200 at the top.

Halbert, Wolf, and Winters, all guys who bench over 600 raw, use medium and strong bands and even multiple bands. Work up to a single. Full range is mostly used but sometimes we press off power rack pins or boards. Your band tension may vary depending on how you hook up the bands. Use two grips—either a wide grip or a close grip. This will result in two PRs. Don't forget to do triceps, lats, and so forth.

Workout #6: Do board presses. I did board presses in 1970. The Culver City Westside guys were doing them at that time. I got very little out of them. Why? I had weak triceps. Larry

Pacifico said I had to work my triceps if I ever was to bench big. He was right. In 1993, Jesse Kellum said I should use them again. Now, we were training our triceps very hard. After our success, everyone was doing board presses and everyone was an expert.

Here's the truth about board presses. They are not a triceps builder if you start the lift with your pecs. Many do just that. Start the motion with the arms. I watch a lot of people do board presses thinking that they will build a strong lockout. I saw people do board presses with bench shirts continuously,



and two of them lost their lockout at the meet by 60 lbs. The others were not top ten benchers anyway. Remember, the bench is a full range motion. Maybe this is why so many dump the bar on their belly and don't practice full range motion. The workout is simple. After a warm up, work up to a max single. One-, two-, or three-boards are used at Westside. Four- and five-boards are for isolating the triceps.

There are exercises that build strength and those that test strength. Board presses test strength. Have you ever watched point karate? They always stop the punch just short of the face. Well, I believe the board press does the same thing. I hear what so and so did off a board press only to go to the meet and be unable to touch their chest. I think his name was Curly or Moe. Or maybe it was Larry. But who cares? What a stooge! These workouts give you a wide variety to choose from. Mix and match any way you want. See you at the meet.

Westside's Top Benchers' Training

I receive many calls asking how our top benchers train. We have 17 benching over 700. One has done 830 (Mike Wolf), two 198s have done a 683 (George Halbert) and a 655 (Jayson Fry), and one 181 (Fred Boldt) has done 628 and is an Arnold Classic winner. Then there's Nick Winters, who made 650 raw at the New England Strength Spectacular. In 1993, I wrote an article titled "Three of a Kind." We had three guys benching 600, one of whom (Kenn Patterson) went on to become the youngest to bench 700 at 22. His actual lift was 728, a world record at 275. Then along came Mike Brown. At 19-years-old, he made 735 at 308 and totaled 2300.

Favorite routines and exercises:

First, everyone does speed work. This is known as the dynamic method. This alone will not make you strong but will rather build a fast rate of force development. Research shows that 154 lbs can develop 264 lbs of force with maximal acceleration. Nine sets are performed—three sets with the index finger on the smooth part of the bar, three sets with a two-inch wide grip, and three sets with the little finger on the power ring. After speed bench, using about 40% of a 1RM on the floor press, they do two sets to near failure with one of three dumbbell weights. Fred uses either 155-, 125-, or 100-lb dumbbells. Sometimes a barbell is used.

Fred's weights are 365, 315, or 275. Remember, they go to near failure. Then it's triceps, lats, upper back, and rear and side delts. Some hammer curls finish the workout. Speed work can be waved by using two sets of 5/8-inch chains to accommodate resistance or mini-bands, which add 45 lbs in the bottom and 85 at the top of the lift. A monster mini provides 110 lbs at the top and 50 in the bottom. Speed benching can be done off rack pins, in the floor press, or with a cambered bar.

Jay Fry has made incredible progress in a short time, going from 530 to 650 at 181 in less than 18 months plus 655 at a body weight of 193. Jay has become quite a student of the game while working with George Halbert. To raise absolute strength, he uses heavy assistance work such as kettlebell triceps extensions and JM presses. This teaches him to fire the correct muscles at the right time. Using chains or bands or hanging kettlebells from the bar not only allows the muscles to become stronger but develops muscle coordination for benching. Jay feels this is far more important than just throwing heavy weight around. To test his strength, Jay uses full range band

presses, floor presses with chains or bands, or just weight. These records are dependent on the special exercises that were mentioned above. Jay does a lot of upper body sled work. This makes him stronger and raises his GPP. The sky is the limit for Jay. His potential is very high and with his drive only time will tell.

Jays's teammate, Fred Boldt, has been at Westside for close to five years. Fred's bench went from 400 at 165 to 556 at 165, placing him second to the great Marcus Schick. He then won the 2005 WPO semifinals with a 628 over Jay's 622 in Chicago. He went on to win the Arnold Classic in 2006 with 628. It's not easy to win the Arnold with all the chaos that goes along with it. How does Fred do it? To test his bench press max, he tries a max off the floor press with five sets of chains weighing 200 lbs on the bar. His best is 345 with his little fingers on the power ring on the bar. A second strength test is a full range bench with light jump-stretch bands that add 100 lbs in the bottom and 200 at lockout. His best is 370. This is what Jay has also done, and their bench presses are very close.

Of course, like all Westsiders, Fred uses the conjugate method. He will rotate from 4- or 5-boards with bands to a steep incline with a barbell. Fred uses a cambered bar on boards to reduce the camber to one inch. For hypertrophy work, Fred likes dumbbell presses. His one set record is 34 reps with 100 lbs. He rotates three dumbbell weights—100, 125, and 155 lb. His best three set record is 14, 12, and nine reps with 155s. He also has done 104 push-ups with his feet elevated 12 inches. Fred's speed work is done with 185 or 205 plus mini-bands that add 85 lbs at lockout or with two sets of 5/8-inch chain that when locked out is roughly 60 lbs.

For special work, straight bar extensions and kettlebell extensions are his mainstay. He does lots of lat and upper back work and rear and side delt work. Fred never misses a workout (nor does anyone at Westside). Fred's motivation is his desire to destroy Jay. I'm sure you will see Fred for a long time to come.

Mike Wolf made rapid progress after coming to Westside. His 585 soon became 825 and then 830. Mike is huge at about 405 lbs. George started working with Mike finding his weaknesses. First, George had Mike push up the triceps work and board press with lots of bands, up to 400 lbs of bands plus weight. Mike also did full range band presses including flat, incline, and decline. At Westside, we do a lot of triceps extensions using the straight bar, dumbbells with palms facing in, roll back style, dumbbells with elbows out to the sides, JM presses, and kettlebell extensions. Mike also does a lot of benches with kettlebells hanging from the bar with doubled up mini-bands.

Mike found his floor press well below our average for his shirt bench. So he pushed it up to 515 with 200 lbs of chain, and this raised his bench considerably. Lots of lat work, pull-downs, bar rows, and dumbbell rows have made it possible for Mike to control the bar placement on his chest.

Last is speed work. A fast rate of force development is essential to lift heavy weights fast. Let's see if Mike can give Westside its first 900 bench.

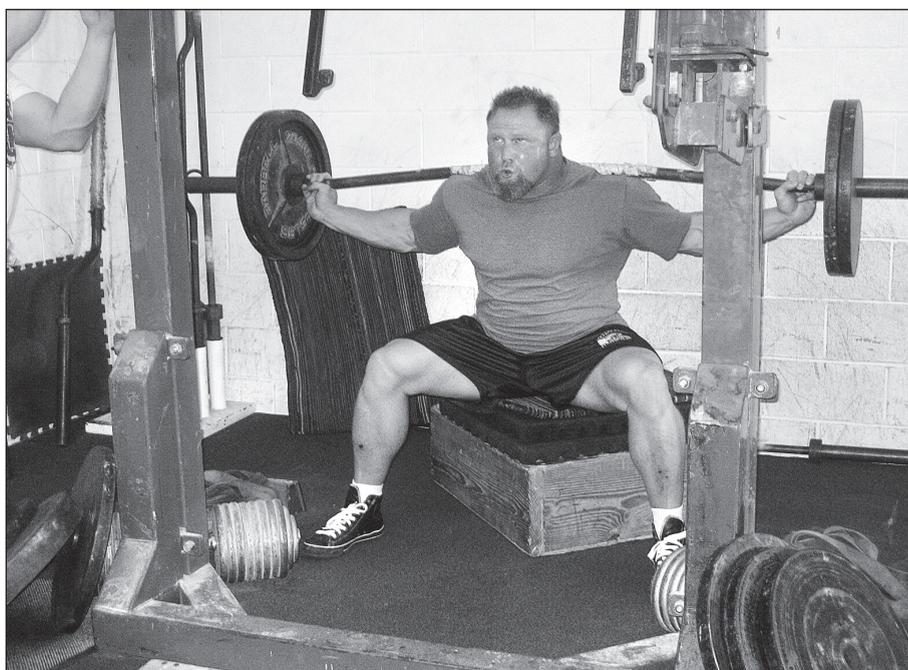
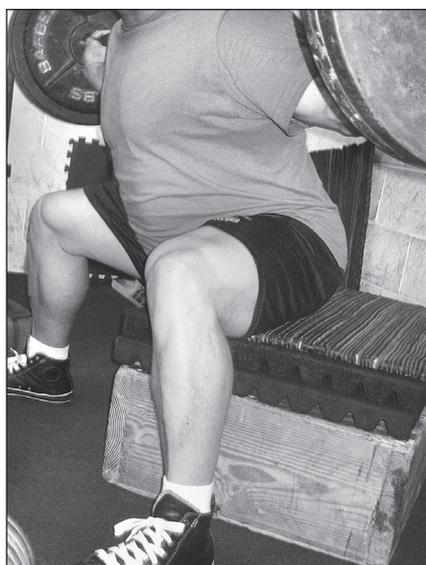
George Halbert is our most decorated bencher. He has 11 all-time world records in three different weight classes. George's views on benching are as follows. Speed work is most important. He knows that if you miss a heavy lift, it wasn't too heavy but wasn't lifted fast enough. His speed work consists of chains, bands, and hanging kettlebells from the bar.

THE SQUAT

Using the Box in the Squat

Box squatting is the most effective method to produce a first rate squat. This is, in my opinion, the safest way to squat because you don't use as much weight as you would with a regular squat. Let me say first that, no, they won't hurt your spine. You don't use 1000 lbs on a 25-inch tall box, and you don't rock on the box. You don't touch and go, and there is no need to do regular power squats before a meet. No knee wraps are worn nor are the straps of the suit pulled up.

By doing sets of two reps for at least eight sets with short rest periods, you will get about a 200-lb carryover to your regular squat. Two of our lifters finished their lifting cycle before a meet with eight sets of two reps with 505 lbs off a slightly below parallel box and both squatted 700 for a meet PR. One was competing in the 242s and the other as a 275. Two years before, in his first meet, our 275 squatted 465. Quite an improvement! There are many advantages to box squatting. One of the most important is recuperation. You can train more often on a box than you can doing regular squats. The original Westside boys (Culver City, California) did them three times a week, which I feel is a bit extreme but they paved the way for this type of training. We do them for the squat part of our workout on Fridays and occasionally on Mondays to build hip and low back power for deadlifting. The NBA's Utah Jazz do box squats for the same reason—recuperation. Greg Shepherd, their strength coach, is a former member of the Culver City gym.



The second reason is equally important. It is generally accepted that you should keep your shins perpendicular to the floor when squatting. With box squatting, you can go past this point (that is, an imaginary line drawn from your ankle to your knee will point toward your body), which places all the stress on the major squatting muscles—the hips, glutes, lower back, and hamstrings. This is a tremendous advantage.

Thirdly, you don't have to ask anyone if you were parallel. Once you establish a below parallel height, all of your squats will be just that—below parallel. I have seen it over and over. As the weights get heavier, the squats get higher. This can't happen with box squats.

- If your hips are weak, use a below parallel box and a wide stance.
- If you need low back power, use a close stance below parallel.
- If your quads are weak, work on a parallel box.
- If you have a sticking point about two inches above parallel, work on a box that is two inches above parallel.

Our advanced squatters use all below parallel boxes. This builds so much power out of the hole that there will be no sticking points. As an added bonus, box squats will build the deadlift as well by overloading the hips and lower back muscles. Your ability to explode off the floor will increase greatly.

Now, how do you do a box squat? They are performed just like regular squats. Fill your abdomen with air and push out against your belt. Push your knees out as far as possible to the sides and with a tightly arched back and squat back (not down) until you completely sit on the box. Every muscle is kept tight while on the box with the exception of the hip flexors. By releasing and then contracting the hip flexors and arching the upper back, you will jump off the box, building tremendous starting strength. Remember to sit back and down, not straight down. Your hamstrings will be strengthened to a high degree, which is essential. Many don't know this, but the hamstrings are hip extensors. Some great squatters have large quads and some do not, but they all have large hamstrings where they tie into the glutes. Remember to sit on the box completely and flex off.

Now, how do you know how much you can full squat if you box squat all the time? Well, let's say you have squatted 600 lbs in a meet and decided to box squat. Let's say you can do 550 off a parallel box. That's a 50-lb carryover. Now, you are doing only box squats and you take a weight 4–6 weeks into the cycle. You hit a 575 squat, a 25-lb jump on that particular box. This will carryover to your 600 contest best. So now expect a 625 at your next meet.

Box squats are much harder than full squats! Do 8–12 sets of two reps with a one-minute rest between sets. This is a tough workout! Don't get psyched up to do your sets. We have found that two reps are ideal. If you are doing 12 sets, you are doing 12 reps per workout. After all, the first rep is the most important one. This will make your contest squat much better. Our most talented lifters will do best on their first rep and then tire quickly whereas our lower skilled people will do better after the first rep is completed because they use the first rep as a body awareness tool. As they become more skilled, their first rep will be their best. I know box squatting is not common, mostly because no one knows how to do them. After reading this or watching my squat tapes or DVDs, you should be fully aware of the benefits.

Many great squatters have done box squats including Marv Phillips, Larry Kidney, Roger Estep, Matt Dimel, and of course, George Fern, who did an 853 squat in track shorts in 1970. If box squats didn't work, we wouldn't do them. I am often asked, why do box squats? We do them to produce world record squats. The late, great Matt Dimel made 1010 in 1985 at SHW. Chuck Vogelpohl pushed the limit of the squat by doing 1025 at 220 lbs, the lightest man to do a grand. I am sure that the original Westside Barbell in Culver City, California, was asked the same questions in the 1960s and early 1970s when Bill West and George Frenn were breaking squats records beyond comprehension. Frenn made 854 in gym trunks at 242 and held a world record in the weight throw.

Later, men such as Larry Kidney and his training partners Marve Phillips broke many world record squats by box squatting. Paul Childress has made 1123 at 308, and I am sure Paul has to defend why he box squats. My friend, Eskil, from Sweden, found a training manual from the 1950s at a Polish weight lifting facility demonstrating the box squat. Today, my friend, Sakari, from Finland, teaches box squatting to their strongest lifters. Lifters from Ireland, Germany, England, Canada, and Sweden are also box squatting. At Westside, in Columbus, Ohio, we have 11 men who squat more than 1000 lbs and a woman, Amy Weisburger, who at 148 has squatted 565. Because I am asked why do box squats, I will explain simply and scientifically why we do them and why you should too.

First, there is only one way to box squat. Pure Power had an article on ways to box squat, but there is only one proven way—the Westside way. Here's how. First, push the glutes rearward as far as possible. With a tight back, arch to descend to the box. Push your neck into your traps. Push your knees apart to maximally activate the hips. When sitting on the box, the shins should be straight up and down or even past perpendicular. This places all the work on the hamstrings, glutes, hips, and low back. These are the precise muscle groups that do a very large percent of the squat. After sitting completely on the box, some glute and hip muscles are relaxed somewhat. Then, forcefully flex the abs, hips, and glutes and jump off the box.

To ascend correctly, push the traps into the bar first. This will flex the back muscles, then the hips and glutes, and finally the legs. If you push with the legs first, you will be in a good morning position because the glutes will raise first causing you to bend over. Remember that where the head goes, the body will follow. Note: Always push the feet out to the sides, not directly down. Chuck Taylors are the best shoes for squatting. This was tested at Ball State University in lab conditions.

Box squats have tremendous advantages over regular squats. These are as follows. You do not get as sore from a box squat workout, and you can recover much faster. If the box that you are squatting on is below parallel and you do a thousand squats, they will all be below parallel regardless of the weight. This is important because when many lifters warm up, they can't break parallel with light weight or as the weight nears a max many will cut depth. However, with a box to sit on, you will always break parallel or any depth desired. Box squats can increase flexibility. When monitoring flexibility, you should be able to break parallel with your competition stance. If this is not possible, sit on a box about two inches above parallel. After mastering that height, reduce the box height by half an inch.

The easiest way is to remove a half-inch rubber mat. Then sit on the box at that new height until comfortable. Reduce the height half an inch again. Continue this until you are not only at

parallel but below. Start with a shoulder width stance. Then widen your stance by an inch or two each time until a very wide stance is achieved. John Stafford has sat on a six-inch box. He is six feet tall, 285 lbs. I am always concerned when a coach asks me how low we can squat, referring to Olympic squats. A very close squat stance makes no sense.

Look at a pyramid. The wider the base, the greater the pyramid. I guess if my only claim to fame was bouncing my ass off my heels with 315, I would ask that question myself. Box squatting with a slow count is a form of proprioceptive neuromuscular facilitation (PNF), commonly used in clinical settings. This type of stretch involves a maximum pre-contraction of the muscle groups to undergo elongation. As the box is lowered to an extreme for your range of motion, a box squat can become a safe ballistic stretch method. This will not only increase your range of motion in the muscle groups but also increase joint mobility.

Box squats also resemble a form of stretching called contract relax agonist contract (CRAC). This information can be found in *Strength and Power in Sport* (1991). If you lower to the box slowly and widen your stance slowly, more muscle flexibility and joint mobility can be achieved. A lighter weight can achieve a bigger squat with box squatting. By training at 50–60% of your 1RM in a three-week wave, a large squat can be developed. Three lifters trained with 405–480 for 8–10 doubles with 120 lbs of chain as a reactive method. They all made their first 800 plus squat.

Jumping ability is developed with box squats. John Stafford, at 290 body weight, can jump onto a 35-inch box with a pair of 35-lb dumbbells. John Harper, a sophomore at Kent State University, is a discus thrower (with 189 feet) who can jump onto a 50-inch box. Maybe more extraordinary is that he is able to sit on his knees and jump onto his feet with 255 lbs on his back due largely to box squatting.

Box squatting increases pulling power. It closely simulates the motion of pulling off the floor first by relaxing on the box after lowering onto it and then exploding upward. This is very close to

the movement known as the modified dive. If one suffers a knee injury, box squatting can be done while rehabilitating the injury. When sitting on a box fully and correctly, the shins are past perpendicular. This reduces the pressure on the patella tendons by placing the majority of the weight on the hamstrings and glutes and on the heels, not the toes. It should be noted



that the box itself reduces a portion of the bar weight or body weight that you are trying to move. After a complete patella tendon rupture, box squats helped me to go from an 821 squat in 1991 to a 920 at 235 body weight in 2002 after the injury. John Bott had similar success. Also, I must not forget Jim Hoskinson, who had a horrendous injury to both knees. He had a 744 squat before the injury and had recently done 1091 in the same weight class at 308.

A box squat combines two very important methods. One is the static dynamic method. It combines two muscle activities. Static work occurs while on the box, although the lifter is constantly moving backward or forward. Then by flexing off the box, the dynamic sequence occurs.

The second method that is used when box squatting is the relaxed overcome by dynamic work. This occurs by sitting on the box with the hips rolling in a relaxed fashion, then switching to an explosive, or dynamic, concentric phase. Both of the above mentioned methods build explosive strength as well as absolute strength. Why are box squats superior to conventional squats? I hope to explain it further through physics.

Lowering to the box in the eccentric phase is a form of potential energy. When sitting on the box in about 0.5 seconds, you are involved in a collision. By using a box to land on, we can produce kinetic energy. The amount of kinetic energy an object has depends on two things—its mass (weight) and its speed. A heavier weight means more kinetic energy. But more importantly, in a regular squat, the eccentric phase lasts about one second, or about twice as long as in a box squat. By being able to relax some muscles and with the use of jump-stretch bands, the box squat is close to twice as fast. If you tripled the speed, it would represent nine times more kinetic energy during the collision.

What about the development of power? Power is defined as work done divided by the time used to do the work. When you do a regular squat, you must do three things. The first is the eccentric phase, where the muscles lengthen. When the eccentric phase stops, a static phase begins where the muscles are not lengthening or shortening but muscle energy is decreasing. Then to raise concentrically, you must start a load while the muscles are held statically, even to a brief extent. Could this phenomenon be the reason that you can lower 50% more than you can raise?

After all, power can be produced for only so long. In a regular squat, you must produce power during all three phases, but a box squat breaks up the eccentric and concentric phases because some of the muscles are relaxing while others are held statically by movement in the hip joints. Here is where force can be redirected very strongly. Because a heavy squat uses a large amount of energy, it makes sense to break the work into separate parts. While box squatting is not plyometrics, it builds tremendous reversal strength.

Wilson's studies (1990) have shown that the stretch reflex lasts up to two seconds. We have proven that by sitting on a box correctly the reflex lasts up to eight seconds. What an advantage for a football lineman on a long count. Explosive strength is developed mainly by explosive efforts such as jumps, shot put, and jerking dumbbells or a barbell. However, it is easiest and safest to develop explosive strength by increasing maximal strength (*Science of Sports Training* by Thomas Kurz). I hope this convinces you to try box squatting, which many of the old champs and the new champs are doing.

Squat Training

I had a lengthy discussion with a long-time world record holder in the javelin. He told me how he trained. He threw everything but the javelin. He also said that the man who broke his record did even more specialty work and less javelin throwing than his predecessor.

John Carlos was the world's fastest man in the late 1960s and was also in trouble a lot for spending most of his time in the weight room and not on the track. Valery Borsof, the Olympic champion in the 100 meter, also concentrated his efforts in the gym, building his sprinting muscles with glute ham raises and raising his GPP. A football player plays football only about 20% of the time. The other 80% is composed of special drills. I personally made a top ten squat in 1972 and am third in 2001. The 920 I did this year ranks sixth on the 242 all-time list. At Westside Barbell, we have many all-time top ten squats. Not only do we not squat four times a week, we don't do any regular squats at all, just box squats.

We developed our training methods after the original Culver City Westside Barbell methods of training and then modified them to some extent to keep up with the times. In 1984, I then added the old, proven Soviet methods. If there is one thing I have learned, no one can only squat to excel at squatting. And no one can squat four times a week and survive it. However, you can train the squat four times a week by special means.

In 1972, the Dynamo Club in Russia came up with a method of training called the conjugate method. This club consisted of more than 70 top lifters. First, 2–40 special exercises were used. At the end of the test period, one lifter said that was enough, but the rest of the lifters wanted more exercises to choose from. Here at Westside, we use hundreds of combinations to increase the squat.

If you look at our training, it is totally intended to raise the squat. One day, we work on special strength and at the same time build the critical squatting muscles and perfect form. Three days later, we do an exercise that builds absolute strength like deep box squatting, good mornings, or some type of pull.

That's two days a week. Now, let's think logically. A chain is only as strong as its weakest link, and so is the squat. I see lifters who hurt their lower back, but instead of paying more attention to it, they go back and squat again. Obviously, their lower back muscles are weak and need extra work. This extra work will prevent a weak link. The rest of your squat muscles may be able to squat 75 or 100 more lbs but not as long as your lower back continues to get injured constantly. The same holds true for hamstrings or even the upper back or abs. Again, do one dynamic squat workout a week using multiple sets with 50–60% and a max effort day where you work up to a max in a box squat, pull, or good morning. Remember, at certain times of the year, you may not be able to break your all-time PR, but you must do all you can much like the Bulgarian method.

Now let's look at two more workouts during the week for the squat. As a bonus, these will also increase your deadlift. The hamstrings and glutes are the primary movers for squatting. Each workout should last 15–30 minutes. A 30-minute workout is a long special workout. It should be almost nonstop. Always include abs in your extra workouts. First, if you can't sit back in the squat, your glutes and hamstrings are weak. Try glute ham raises. This exercise works the hamstrings properly. The hamstrings extend from the knee to the glute, and both attachments work simultaneously as if you were jumping or sprinting or of course squatting. If you alternate



a set of abs and a set of glute ham raises, you have a great extra workout that is designed to raise your squat. In the old USSR, 600 glue ham raises a month was just maintenance work. We like to tilt the glute ham bench as high as 30 inches. This makes the exercise harder.

Pull-throughs work the glutes and hamstrings very well. Pick an ab exercise and do supersets. When you fail a squat, many times

it is caused by your back bending so good mornings are in order. Try using jump-stretch bands on the bar. We prefer high reps, but I never count the reps. To change the intensity, use stronger bands. For one workout do them with a bent over style and for the next with an arched back. We also do a lot of regular weighted good mornings of all types. For squatting without placing a bar on your back, do belt squats. One method is belt squats with weights. A second method is to hook a jump-stretch band through your power belt and stand in both ends. Then do box squats. This will build lower body flexion. Pull a weighted sled. Early in the week use the heaviest weight and reduce the amount as the week goes on. You could substitute reverse hypers for a squat workout.

A number of extra workouts can be used for squatting. I suggest that all be done on a box such as the front squat, Zercher squat, MantaRay squat, belt squat, safety bar squat, and cambered bar squat. Immediately after squatting, go to the special exercises that fit your individual needs.

If you know how to squat, there is no need to do extra actual squatting. In fact, if your squat form is not correct, more squatting will reinforce the same bad form. To become biomechanically sound, you must have proper muscle control. Very few people have great form. If your back is weak, you will bend over causing bad form. If your glutes and hamstrings are weak, it is hard to sit back properly. If your abs are weak, you will be weak in the bottom and fold over.

An extra workout can also be a flexibility workout. Whatever workout you decide to do, include abdominal work. Remember, don't train longer than 30 minutes for these extra workouts. If you are out of shape, these workouts should be done almost nonstop. The better condition you are in, the less stressful your heavy or high volume training will be.

Matt Smith has made great progress by doing special exercises such as glute ham raises and safety squat bar squats. His squat has gone from 733 to 930 and his deadlift from 633 to 800 in, believe it or not, two years. Mike Ruggiera's squat was raised from 780 to 1000 in two and a half years. Reverse hypers and pull-throughs helped Mike.

What I have been describing is called the conjugate method. Special exercises will not only increase strength but perfect form. This training has produced nine, 900 plus squatters and four at a grand, all from a small gym. Success usually requires a complex plan with many parts. If one part is missing, you will fail.

Periodization in Squat Training

When designing a yearly model for the squat, many things must be considered. Most importantly, the level of preparedness needs to be taken into consideration. This program pertains to the very highly trained squatter (i.e. those who squat 900 or more). One must develop speed-strength, which is the ability to accelerate with light to medium loads, creating explosive force.

Strength-speed is a learned process to push maximum weights as fast as possible. This increases the powerful stretch reflex system and can be accomplished only by accelerating eccentrics and progressive concentrics. Strong bands must be used here. The bands will drive you down at a much faster rate than gravity alone, thus creating a great amount of kinetic energy which is transferred into the muscle and connective tissues causing a strong stretch reflex and providing an equally fast concentric phase.

Several bars can be used on squat day. I use the safety squat bar on speed day quite often and so do Dave Tate and many others at Westside. Paul Childress, a 1085 squatter, uses our 14-inch camber bar for long periods of training to give his shoulders a rest. The Buffalo bar, MantaRay and Dave Draper's device can also be used as well as belt squats. The bands solve the problem of accommodating resistance. A load may be heavy at the bottom but light at the top. Thus, half the exercise may be wasted. Fred Hatfield talked about compensatory acceleration. He was on the right track. By pushing as fast as possible against a light or heavy load, more force would be developed. However, if the weights are too light, the bar moves too fast and force is not developed.

- Dr. Squat used a very fast eccentric phase that contributed to his very fast recovery in the squat. We have added two important elements.
- Bands greatly increase the stretch reflex through accelerated eccentrics. The bands also create a greater load at the top of the lift, thereby accommodating resistance.

Time under tension is lengthened. This time is necessary for the development of maximum force. Max force is reached in 0.3–0.4 seconds. However, it usually takes longer to complete a lift. Can the time to fully reach max force be increased with just the barbell? No. But with the addition of bands of adequate strength, the deceleration phase of the bar is greatly reduced on the ascent. You must push as hard as possible for a greater length of time.

Max force is, of course, highest at the start of the ascent, with starting strength being employed. But by using a large load consisting mostly of band tension and a small amount of barbell weight, I believe the duration of maximum force and muscle tension can be lengthened, thus producing strength-speed, or the ability to push heavy resistance at a fast rate.

Now, let's look at a four-week program of strength-speed work made possible by combining a high percentage of band tension and a low percentage of bar weight. This cycle consists of four

workouts, raising the load each week. Five sets of two reps are done each week. This is a supra-maximal method to develop maximal strength and strength speed.

	Band tension top/bottom	Bar weight	Weight at top	Weight at bottom
Week 1	635/465	135	770	600
Week 2	635/465	185	820	650
Week 3	635/465	225	860	690
Week 4	635/465	275	910	740

This is followed the next week by two reps at 325 (bar weight, same band tension), a single at 375, and a single at 415. This translates to a lift of 1050 at the top and 860 at the bottom. Lower the bar quickly but under control to a just below parallel box. (See previous articles on box squatting.) This causes a great stretch reflex and maximal acceleration. The usual special work is then performed including glute ham raises, the reverse hyper machine, abdominal work, or similar exercises.

This cycle is very taxing and requires some short restoration work on the off days, averaging 30 minutes and including sled work, glute ham raises, the reverse hyper machine, and abdominals. The next four weeks are planned for speed and quickness. The bar weight ranges from 425–485 plus band tension of 260 at the top and 200 at the bottom. Do six sets of two reps. Add 20 lbs of plates each week.

	Band tension top/bottom	Bar weight	Weight at top	Weight at bottom
Week 1	260/200	425	685	625
Week 2	260/200	445	705	645
Week 3	260/200	465	725	665
Week 4	260/200	485	745	685

This may sound heavy, but because of the added advantage created by the bands on the eccentric phase, you become very explosive. This phase is also accompanied by special work for the abs and the posterior chain. Now, the final phase. We used three bar weights: 430, 460, and 480. The band tension is 440 at the top and 300 on the box.

	Band tension top/bottom	Bar weight	Weight at top	Weight at bottom
Week 1	430/300	430	860	730
Week 2	430/300	460	890	760
Week 3	430/300	480	910	780
Week 4	430/300	430	860	730

This four-week phase is a circa-maximal, or near maximal, method. It is designed to build speed and explosive strength. It is a short meso-cycle with a mid-pendulum wave. Finally, a two-week deloading phase is done, a microcycle, to bring maximal results to the contest.

The squat day on boxes is Friday and maximal effort day is Monday. Monday is devoted to exercises for the squat as well as the deadlift. A core lift such as a good morning or a safety squat bar squat is done followed by 2–3 special exercises for the trunk, glutes, hamstrings, or hips. As you can see, these different methods, or cycles, easily blend together to create a constant rise in performance by perfecting all special strengths while raising work capacity and mastering weaknesses through the conjugate method. This is necessary for all highly qualified lifters.

Intensity Loading for the Squat

For squatting, we use a pendulum wave of three weeks. A squat cycle of a box is 50–60% of contest max, always accommodating resistance. The simplest method is to use chains. Three of our lifters squatted 840 by using:

- Week 1: 12x2 with 405 and 80 lbs of chain
- Week 2: 12x2 with 450 and 80 lbs of chain
- Week 3: 10x2 with 480 and 80 lbs of chain

As you can see, this is 50–60% of 800 lbs. A total of 24 lifts was done in weeks one and two and 20 lifts in week three. The equipment we use is groove briefs or a squat suit with the straps down. When one compares training sets to a max squat, it is:

- 58% in week 1
- 64% in week 2
- 68% in week 3

These are calculated from a box squat record. The three-week pendulum wave is continuous. If it is translated to a four-week or monthly plan it equals 92 lifts per month. For slow work or strength–speed, which is weight at 90% or above, use jump-stretch bands. Many times the total weight is over 100% of the contest max. At the bottom or box level, the weight is also extreme due to the over-speed eccentric phase.

Weekly load is five sets of two reps. For pure strength-speed, the cycle lasts two weeks. Here, a monthly total can be calculated to 20 lifts. These are done with band tension representing 65% of total load and bar weight of 35%.

The next two weeks are speed-strength and explosive power work with 40% bar weight of 1RM and 25% of band tension for a total of 65%. Twelve sets for two reps for two weeks equal 48 lifts, bringing the total lift count to 68 lifts in a mixed monthly load.

A monthly cycle like this must sometimes be used to regulate the training for an upcoming meet. When the contest is 5–7 weeks away, the last phase of training begins. It is the circa-maximal phase which lasts four weeks. Again, always use the pendulum wave system.

- Week 1, 47%
- Week 2, 50%
- Week 3, 52%

The rest is band tension, about 40%. We know circa-max weight is 90–97% of a 1RM, but bands add kinetic energy with over-speed eccentrics. That causes additional muscle soreness and accommodates resistance maximally throughout the entire range of motion. The monthly plan, or macrocycle is ten lifts per week, five sets of two reps. At this intensity, rest periods of 60 seconds are used.

The circa-maximal as well as strength-speed work is extremely difficult. At Westside, 12 lifts per month on max effort day is constant during the year. With the ten lifts on dynamic day, 52 lifts per month are done. This can cause you to overtrain in the highest intensity range, 90–100%. For the first few circa-max phases it is advisable to pass on the core exercises every other week. However, when you become accustomed to intense loading, you can resume the max effort work as before. Instead of doing max effort work, replace it with repetition work on glute ham raises, the reverse hyper machine, lat work, and so on. During the download week, the week before the meet drop back to the first week's weight of the pendulum wave. Check your form and monitor your physical state. Again, push the special work.

In summary, dynamic work equates 92 lifts per month. When using jumping exercises, use Prilepin's table to regulate the number of jumps by their intensity. When weighted jumps are used, use the same formula to calculate the number of jumps.

Sample Squat Workouts

I'm always asked to make personal workout programs for lifters. This is impossible to do without seeing these people in the gym and observing their form. Their form may be terrible or they may have a blatant muscle weakness that is causing bad form. For all those people, here is a sample workout to prepare you for a meet.

This is the workout that Shawn Nutter used for his first meet. His lifts at 242 were an 840 squat, a 575 bench, and a 650 deadlift. At his first meet, he totaled 2065. We based his attempts on a max band squat of 565 bar weight plus 375 lbs of band tension. The bands were attached to the base of our monolift, which had a 2 x 4 taped to each side. Although we don't truly cycle yearly for a meet, the circa-max, or near maximal, phase lasts three weeks plus there are two deload phase weeks. To begin with, Shawn used a three-week wave with a safety squat bar. Throughout the year, we use the safety squat bar and our 14-inch cambered bar to save the shoulders and arms.

Here is Shawn's training for the IPA Nationals.

First wave with the safety squat bar:

- Week 1: 8 sets of 2 reps with 325 plus light bands
- Week 2: 8 sets of 2 reps with 375 plus light bands
- Week 3: 6 sets of 2 reps with 415 plus light bands
- Week 4: 8 sets of 2 reps with 325 plus medium bands
- Week 5: 8 sets of 2 reps with 375 plus medium bands
- Week 6: 6 sets of 2 reps with 415 plus medium bands

Switch to a 14-inch cambered bar:

- Week 7: 8 sets of 2 reps with 405 plus strong bands
- Week 8: 8 sets of 2 reps with 465 plus strong bands
- Week 9: 6 sets of 2 reps with 505 plus strong bands

Circa-max phase:

- Week 10: 5 sets of 2 reps with 435 plus medium and strong bands
- Week 11: 4 sets of 2 reps with 465 plus medium and strong bands
- Week 12: work up to 565 with medium and strong bands, about 350 lbs of band tension at the top

Deload phase:

- Week 13: work up to 565 with one strong band for 1 rep
- Week 14: work up to 405 plus 120 lbs of chain for 3 sets of 2 reps
- Week 15 (meet): 2005 IPA Nationals

I knew the training should have rendered an 860 squat at the meet. He blew up 840 like a toy. We like to leave some on the platform and make substantial progress at the next meet. Let's look at Shawn's special exercises after the squat workout.

After Friday's squat workout:

- Speed pulls: 335 plus 100 lbs of band tension at the start and 220 at lockout, 5–8 singles
- Forty-five-degree hypers: 3–5 sets with 45–135, 2–6 reps
- Calf/ham glute raises with a 45-lb plate, 4–6 sets of 3–6 reps
- Abs of some kind
- Roller reverse hyper machine, 280 for 3x10
- Strap reverse hyper machine, 380 for 3x10

After some light stretching, he's done. Monday is max effort for the squat and deadlift. Here is Shawn's 15-week cycle. Yours can vary.

Week 1: Raise GPP with sled pulls, 180 lbs for six trips of 200 feet as a warm up; ten-inch low box squat with the safety squat bar for max singles; good mornings on the Back Attack machine; 45-degree hypers, four sets of six reps with 90 lb; chest supported rows; five sets on the reverse hyper machine; abs

Week 2: Rack pulls with plates six inches off the floor; chest supported rows; reverse hyper, three sets; roller reverse hyper, three sets; strap reverse hyper; abs

Week 3: Sled pulls, 360 lbs, four trips of 200 feet for a warm up; cambered bar good mornings to a max triple; straight leg deadlifts, work up to 455 for five reps; barbell rows; lat pull-downs with V-bar; strap reverse hyper; abs



Week 4: Reverse band box squats with monster mini-bands (reduces weight on the box by 120 lbs; made 775); good mornings on the Back Attack machine; dumbbell rows; kettlebell swings; calf/ham glute raises holding a 45-lb plate; abs

Week 5: Sled pulls, 135 for eight trips of 200 feet; concentric safety squat bar squats done to a max single; 45-degree reverse hyper, 180 for three sets of two reps; chest supported rows; roller reverse hyper, three light sets; strap reverse hyper, three light sets; abs

Week 6: Close stance sumo standing on a two-inch box for a max single; front squats on a ten-inch box for 6–8 reps with moderate weight; calf/ham glute raises for sets of six reps; barbell rows; strap reverse hyper, four sets; abs

Week 7: Sled pulls, eight trips of 100 feet; lat pull-downs, wide bar and V-handle; band leg curls; band good mornings; reverse hyper; abs

Week 8: Band deadlifts, 370 lbs of tension at the top, max single (he made 405 on the bar with 370 lbs of band tension); chest supported rows; calf/ham glute raises, three sets of four reps, 90 lbs; strap reverse hyper, three sets; abs

Week 9: Light sled pulls, 135 for eight sets of two reps; light lat pull-downs; roller reverse hyper, three light sets; abs

This workout is very easy because the following Friday the circa-max phase starts. Also, during the next three weeks, our max effort is changed from maxing out on a barbell lift to pushing the special exercises to high limits. Don't push the low back and lats plus abs together. Rather, we train one muscle group very hard and the others moderately hard.

Week 10: Light good mornings, work up to 70% for three reps, one set; moderate chest supported rows; three sets of three reps of calf/ham glute raises as heavy as possible; heavy reverse hypers, three sets of ten reps; roller reverse hypers with 360 lbs, three sets of ten reps; strap reverse hypers with 480 lbs; abs

Week 11: Sled pulls, 225 lbs for six trips of 200 feet; barbell rows, 135 for four sets of six reps; heavy reverse hyper, both styles, weight the same as week 10; abs

Week 12: Because we take a max on Friday with lots of band tension, no barbell exercises are done; chest supported rows; calf/ham glute raises, three sets with light weight; 45-degree reverse hyper, 200 lbs, three sets of two reps; light roller RH, 180 lbs, three sets of ten reps; abs

Week 13: Remember, this is a deload week; sled pulls, 90 lbs, six sets of 200 feet; light lat rows or pull-downs; moderate reverse hyper, two sets on roller model with 270 lbs, ten reps, two sets on strap model, 360 lbs for ten reps; abs

Week 14: This is the Monday of the meet. Do light reverse hyper. Note: After both squat day and max effort day workouts, always stretch lightly and do some joint mobility work. Most lifters at Westside never wear the straps up or knee wraps. This is up to you. All squats are done on boxes. You must taper down before meet days.

GPP is very important if you want to reach the top. If you are unfit and can't do the proper exercises or do sled pulling, treadmill work, or kettlebell work, you will undoubtedly fail. I have seen men who have had to quit due to poor health because they didn't believe in being physically fit. These men are classified as "ronins," or samurais without a master. When they quit, they have no one to answer to when they could have passed on their experience to others so they won't make the same mistakes.

At the meet, open up light, something around 90% of your contest best. Don't let your ego beat you. If you must, practice with your gear. Know your attempts and have good help with you. Don't ask strangers to help. They don't know you or your needs. Don't look at the meet as your last but rather build your total from meet to meet.

At Westside, we help each other. If one of our lifters asks someone outside our gym for help, we feel betrayed. You are either with us or against us. It may take a while to master the gear. There is a lot of good gear to choose from. Don't mix and match systems. This won't work. Powerlifting is a great sport so respect it.

DEADLIFT TRAINING

There are close to hundred 700-lb benchers and over 50, 1000-lb squatters. But when one looks at the deadlift, there are only eight, 900 plus deadlifters. The incredibly strong, Eddie Coan, made 901 at 220 in 1991. He is by far the lightest of the group. My old friend, Danny Wohleber, of Cleveland, Ohio, was the youngest at 21-years-old in 1982 and at a body weight of 268. This brief bit of history illustrates how difficult the deadlift truly is.

We also got lazy in the deadlift. After all, Ted Arcidi made the first official 700 (705) bench in 1985. Now, at least 65 others have done that much. My old friend, Dave Waddington, made the first 1000 (1003) squat in 1981. Now, we have over 50 and the number is growing. I believe there are several reasons for this. One is the lack of supportive gear in the deadlift. Put down a few Benjamins for a better bench shirt and squat suit and your bench and squat will probably go up. Although there are deadlift suits, they don't have the same impact as other power gear. Except for Eddie Coan, most men found it necessary to gain a large amount of weight, which helped the squat but destroyed the leverage needed to pull such weight. Only three out of the eight made at least three times body weight.

I know the greatest deadlifters are built to deadlift. At Westside, we have never had the luxury of such a specimen. We had to develop the deadlift, just like Matt's increase from 633 to 825 in 30 months. In New Orleans in September 2002, I was lucky to witness not one but two, 900 plus deadlifts by Gary Frank and Andy Bolton. After trading the record back and forth, Andy reclaimed it in Columbus, Ohio, in March 2003 with 934. With Steve Goggins pulling 881 and



Ano Turtiainen having made 892, it is apparent that we must work on deadlifting to keep up. Some lifters are born to deadlift (i.e. short back, long arms, and large hands). In fact, most big deadlifters lack a big bench except for Gary. So, how can one obtain a big deadlift? Hard work and more hard work

Exercises for the Deadlift

1. Jump-stretch band pulls: Our platform is designed to provide 100 lbs of tension at the start and 220 lbs at lockout. The bar weight is about 60–605% of your meet deadlift. We also will add more band tension at the lockout only, leaving the original start tension the same. A second method is to drape chains over the bar. For a 700 plus pull, use 3–4 sets of 5/8-inch chains that are five feet long. A variation of the chain method is to attach the chain to the platform on one end. As the bar is pulled upward, the chain will fall on the bar at any height desired.
2. Ultra-wide deadlifts, sumo style: This develops extremely strong hip muscles. Tim Harold went from a hard 700 pull to an easy 775 pull in three months time.
3. Rack pulls: Choose pins that allow only about 10% over your best regular deadlift.
4. Dave Draper's squat device: This rapidly changes the body position. This is precisely why squatting with special bars work. They artificially change the length of the spine.
5. Belt squats: These build tremendous leg strength without taxing the back. Use a belt squat machine or stand on boxes using a belt from which you can suspend weight. These not only build the entire lower body but also correct pelvic tilt.
6. Opposite style: If you pull conventional, try a sumo record. One style will help the other. One must also use special exercises to increase the deadlift. Very few lifters can excel by only deadlifting. I've already talked about good mornings and special squats, but there are exercises that isolate certain muscle groups. The deadlift is done for singles, squats 1–3 reps, and good mornings 1–5 reps. The special exercises below are to be done in the 6–12 rep range or higher.
7. Glute ham raises: These are to be done to 2–10 reps per set, depending on the amount of weight used. You can increase the difficulty of this exercise by raising the rear of the glute ham bench. Sometimes this version is referred to as an inverse curl.
8. Pull-throughs: Face away from a low pulley device, grab a single handle attachment connected to the cable, and walk forward a few feet. Squat down with the arms straight and stand back up.
9. Modified glute ham raises: Do these on a 45-degree hyper bench. While performing a back raise with a bar on your back, simply perform a partial glute ham raise simultaneously.
10. Band leg curls: Attach a band around the lower support of a power rack. Place a bench about four feet from the rack. Hook your heels in the band, sit on the bench, and do leg curls.
11. Band good mornings: Place a band around your neck and stand on the other end.

Always rotate a core exercise each week. A good morning, a low box squat, or a rack pull can be rotated. Switch the special exercises as often as necessary. One exercise may make the difference between failure and success. So pick wisely. Don't pick the ones you like but the ones that work.

Technique

For conventional deadlifts and poor lockout, the feet should be pointed straight ahead. This will allow the hips to rotate forward farther and stronger. If the feet are turned out, less hip rotation is achieved. For sumo style, always push the feet apart while pulling. This brings the hips forward as fast as possible, increasing leverage. The strongest style is feet straight forward. How straight your feet will be is dependent on your flexibility, which also determines the width of your stance. Push the feet apart and pull backward toward the body. This keeps the shoulders above or hopefully behind the bar.

I learned to deadlift from many, but Mike Bridges was most instrumental in my technique and teaching technique. My old friend, Vince Anello, taught me that it takes many exercises besides the deadlift to excel at it. When asked what make his deadlift so great (821 at 198), Vince replied, "Anything makes my deadlift go up." He was right.

For grip, Ed Coan told me to train the fingers to hold on to the bar. Training the forearms makes them bigger and your hands thicker, making your grip worse. I hope some of these tips get you a new record in the deadlift. The back has much potential, which is seldom reached. For such a simple lift, the deadlift can be complicated to train. If one only deadlifts, progress will stall or injuries are certain. No one is totally built to deadlift. The lower back can be overtrained if one bends over too much, or it can be undertrained if the legs are used too much. If sumo deadlifts are done constantly, the back will become weak while the hips will be overused. My friend, Sakari, from Finland, has surveyed the top 15 deadlifters in Finland and discovered that more than 60% of the deadlift training for sumo pullers is special exercises. At Westside, we have found the same.

Using the Conjugate Method in the Deadlift

There are many styles of good mornings to choose from. Matt Smith does mostly concentric good mornings. He fixes a set of chains hanging from the power rack with the loop of the chain three feet off the floor. He suspends the bar in the chains. He ducks under the bar and muscles up the weight. Once your style is developed, continue to use that style, and as the weight goes up, so does your squat and deadlift. Matt's best is 860 lbs. A final note: Don't swing the weight. If you do, you may start the load with the bar behind the knees. This is a squat, not a good morning. Remember, the bar must be in front of the knees to be a good morning. The concentric good morning builds little muscle mass.

The most common good morning at Westside is the bent-over style with a 14-inch cambered bar. First, stand up with the bar. Sink the chest to round the back slightly. Fill the abs with air and bend over with the glutes pushed out to the rear as far as possible. When going from the eccentric phase to the concentric phase, try to arch the back as you complete the lift. Don't go too low. On EMG testing, the spinal erectors will shut off and the low lumbar will be activated. This is dangerous. The next type of good morning is the arched back style. This is my favorite. I like the

safety squat bar for this exercise. I don't wear gear or a belt. Push the glutes to the rear as far as possible. Very little leg bend is used. Overarch the back. In the bottom, pause for a split second, push your head into the pad by picking up your chin, and come up. When I break my arched back good morning record, I break my squat record. The camber of the safety squat bar places the center line of the bar well in front of the knees.

Chuck Vogelpohl and many others do a combination squat/good morning. Just bend over into a good morning and then drop into a parallel squat and return to the starting position. This can be done with or without a box. Try to keep the reps to lower than three and no more than six. Whether you wear a belt and/or suit with the straps down is up to you and your ability. We use many special bars for squats as well as good mornings. We also sometimes raise the heels by two inches. This puts extra work on the lower back. Raising the toes 1–2 inches puts pressure on the hamstrings. The legendary Paul Anderson was doing all the varieties of the good mornings I have talked about. A training partner of Paul Childress let me in on a little secret to building some very strong erectors. Place one foot on a 2 x 6 board. Do 3–5 reps in either the bent over or arched back good morning. This will really isolate the spinal erectors and hamstrings. If it sounds like Westsiders do a lot of good mornings, we do.

For other sports teams, try doing walking bent over lunges with a safety squat bar. I've had NFL football players, top soccer players from the United Kingdom, professional rugby coaches from the United Kingdom, and MMA fighters do this, and it kicked their asses in a good way. Very low box squats are also used to build a deadlift by building a strong lower back and hips by isolating these crucial muscle groups. Some men who are very flexible will squat off a six-inch box, although most use a ten-inch box. Reps of 1–5 works best. A strong squatter will do 60–70% of their contest squat. Use groove briefs or a suit with the straps down. Don't forget to use as many different bars as possible to break records.

After doing a max effort workout with a special squat or good morning or even a box, rack, or regular deadlift, there are very specialized exercises that must be done. The following describes some of them. In the 45-degree back raise, work up to a hard set of 3–5 reps. A decent goal would be 200 lbs for five reps. Lock the low back statically and squeeze the glutes as hard as possible. We use our own C/H/G design with a three-foot wide pad. After all, a wider base is best. If your base is narrower than the top, it is unstable and so is any coach who preaches this style.

Pull-throughs are very productive. They can be done with a jump-stretch band or a low pulley machine. Do high reps of about 10–15. When doing heavy weight on a low pulley, it is hard to keep your balance because the weight on the cable may exceed your body weight. Another way to do pull-throughs, the original way, is with a kettlebell. Use a shoulder width stance. Place both hands on the kettlebell. Swing it through the legs until the hamstrings and glutes stop the bell. This sets the stretch reflex into action. Very quickly, swing to the front to waist height or higher and repeat for 6–12 reps depending on the weight. Do 3–4 sets. These can be done with one arm, two arms, or alternating hands.

Try some one-arm deadlifts. Sumo style works best. Use straps or a hook grip. They work muscles you didn't know you had. Reps of 3–5 work best. Herman Gonner has done 727 lbs. Zercher lifts will build every squat and deadlift muscle in your body with the exception of your hands. Westside does a lot of grip work with various devices such as the Rolling Thunder from Ironmind, the G-Rex Grip from Sorinex, the Telegraph Key, and by holding the bell end of a hex dumbbell.

Pay attention to stretching and joint mobility work. Ab work is also essential. I prefer the stand up style. Kettlebell swings work the abs as well. Some Westsiders do weighted sit-ups, flat or decline. We also use a device from Pat Roberts that has helped a lot. It's a wheel with metal foot straps with which you walk on your hands or do push-ups. We also do a lot of static holds with the wheel. It not only builds the abs, but it works the upper and lower back. An added plus for me is that it works my groin and legs.

The Reverse Hyper Extension Machine

One other very important machine, the reverse hyper machine, will not only build the hamstrings, glutes, and spinal erectors but also traction the low back by rotating the sacrum and rehydrating the disks. The reverse hyper machine has two U.S. patents, a third patent pending, and a U.S. trademark. This machine is used at least four times a week. On a strap Pro model, Chuck's normal weight is 480–520 for three sets of ten reps. On the same day, Chuck will also do three sets on a roller Pro model. The usual weight is 360 for ten reps. This workout is done on Monday and Friday. On bench days, he performs two sets of 15 reps on just one machine with about 70% of the weight of the heavy day. Also, a lot of leg curls are done with the roller Pro model.

Westside Favorite Types of Deadlifts

1. **Jump-stretch band pulls:** Our platform is designed to provide 100 lbs of tension at the start and 220 lbs at lockout. The bar weight is about 60–65% of your meet deadlift. We also will add more tension at the lockout only, leaving the original start tension the same. A second method is to drape chains over the bar. For a 700 plus pull, use 3–4 sets of 5/8-inch chains that are five feet long. A variation of the chain method is to attach the chain to the platform on one end. As the bar is pulled upward, the chain will fall on the bar at any height desired.
2. **Ultra-wide deadlifts, sumo style:** This develops extremely strong hip muscles. Tim Harold went from a hard 700 pull to an easy 775 pull in three months time.
3. **Box deadlifts:** This is a productive method. These are done by standing on a platform ranging in height from 1–4 inches. A conventional or sumo deadlifter can use four levels up to four inches. Keep track of each box record for a single. To increase grip strength, do a triple, pausing each rep on the floor. Pulling off a platform will build the start or finish of the deadlift regardless which portion of your deadlift is lagging. This is done by increasing the range of motion by 1–4 inches, depending on box height. A bonus is developing your grip by having to hold on to the bar longer than a regular deadlift. My old friend, Jerry Bell (the first 165 to pull 700 officially) from Toledo, Ohio, would stand on a four-inch platform to train his deadlift with obvious results. Rick Crain made a 716 deadlift at 165, a world record at the time in 1982. He did both wide and close stance deadlift training off a coke crate to build his phenomenal pulling power. Don Blue, a 148 king, did the same. Don was in an altercation and was stabbed in the eye and lung, yet recovered well enough in eight weeks to again break the deadlift record.

4. Rack pulls: These are also effective. Most lifters do rack pulls incorrectly. That is, the bar is too high off the floor allowing one to lift a weight that will never be attempted in a meet. This can cause a total breakdown of the central nervous system. An Olympic lifting guideline contends that the optimal weight percent for pulls be restricted to 10% above the best clean or snatch. This was discovered by AD Ermakov and NS Atanasov (1975) by accumulating the results of 780 highly skilled weight lifters. Lifts at 85% were the most used at 22.9%. Ninety percent of the lifts were done 16.7% of the time, and lifts of 80% were done 14% of the time. Compare this with weights of 100% which were done only 2.5% of the time. In 1982, I made a 722 deadlift at 220. My best rack pulls were 705 at two inches off the floor, 730 at four inches off the floor, and 760 at six inches off the floor. I later made 855 eight inches off the floor and 805 six inches off the floor with straps. But not until I recently made a 715 PR with no straps two inches off the floor did I make progress again. I realized that I will never make an 855 or even 805 deadlift. I was wearing myself out for nothing.

The law of accentuation states that strength should be trained only in the range or sport movement where the need for high force production is maximal (V. Zatsiorsky). It would seem that to lift weights not remotely possible is a waste of time and energy. Rather, it is beneficial to do several singles ranging from about 80–90% of a maximum deadlift. I recommend the guidelines set forth by AS Prilepin (1974). Because the deadlift is very taxing on the central nervous system, I recommend the minimal number of lifts to be ten at 80%, reducing to four lifts at 90% of a particular pin record.

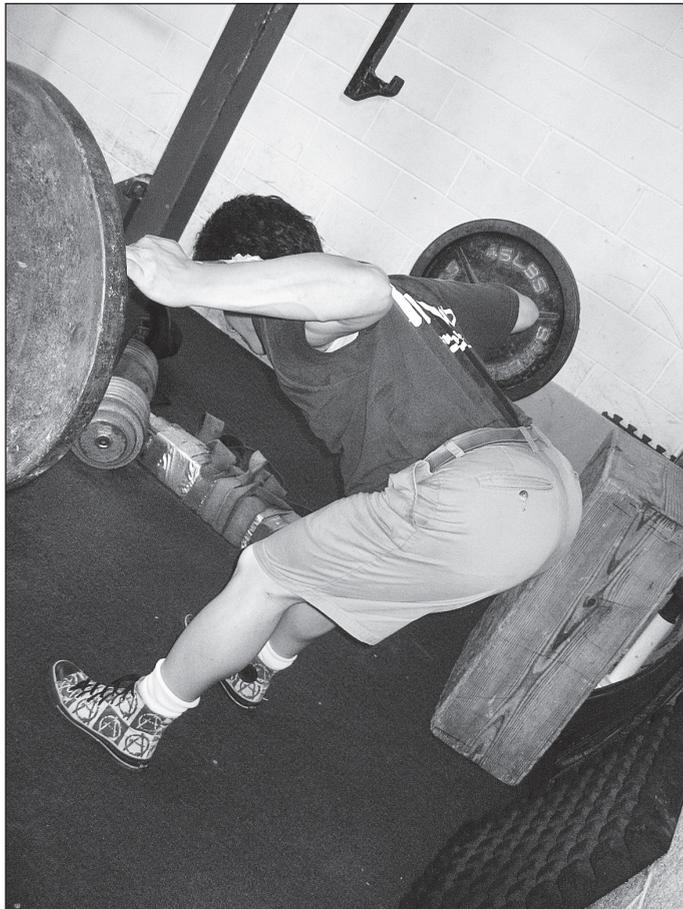
Periodization for the Deadlift

What can be done for the deadlift? Well, let's try training. One must train the deadlift in a multi-year plan. An 8–12 week cycle won't work. For example, it may take six months to raise your hamstrings up to acceptable levels. Deadlift records have made little progress in recent years. I believe it is easy to add pounds to a squat or bench press due to more progressive equipment. The supportive gear, in Westside's opinion, pushes one to gain body weight to increase the squat and bench press. However, anyone, including myself, can tell you that if you're too heavy, your pull is destroyed.

With all that said, how do you train the deadlift for a meet? You don't. One must train the deadlift in a multi-year plan. An 8- or 12-week cycle won't work. For example, it may take six months to raise your hamstrings up to acceptable levels. If not, you will never reach your potential. Let's look at Matt Smith's progress in a 30-month period. Matt had a 633 deadlift meet PR. Two and a half years later, it is 825. This deadlift completed a nine for nine day and gave Matt a 2445 total at SHW.

Matt used the conjugate method. This system links special exercises that will increase awareness and coordination. Its purpose is to raise the classical lifts. First used for the Olympic lifting team at the Dynamo Club in the old USSR, this method was tested on 70 top lifters. It consisted of 25–40 special exercises. At the end of the first study, only one lifter was satisfied with the number of exercises. The rest wanted more.

Westside Barbell also began using this system in the early 1970s. If I put one million dollars under a rock in the parking lot and told you to find it, chances are the first rock you pick up will



have nothing under it. I bet that million that you would keep looking until you struck it rich. It's the same with exercises. If you look long enough, you will find methods and exercises that work best for you while realizing that many are worthless in comparison.

Now, let's look at a constantly revolving system of exercises that are used on max effort day, always trying for a PR. For the advanced lifter, do three lifts, all singles—one at roughly 90% and then a PR, and if it is truly a max, stop. If not, try one more. It is much better to break new ground as often as possible. Lifting weights of 90% or more for more than three weeks will stop progress, but by rotating the core special exercises each week, one can max out all year long. This system is the super-maximal method.

Here are several workouts for the deadlift that can be coupled any way you want.



Workout 1: Safety squat bar squats on a 12-inch box. Work up to max. Next, glute ham raises, the reverse hyper, and abs.

Workout 2: Bent-over good mornings to a max single or a three rep max. Then sled pulling for eight trips of 200 feet with moderate weight, the reverse hyper, lat rows on a chest supported machine, and abs.

Workout 3: Deadlift using the lightened method by placing the jump-stretch bands at 5 feet 6 inches off the floor to lighten the load by 65, 110, or 150 lbs. Work up to a max. Next, do pull-throughs, dumbbell rows, the reverse hyper machine, and leg raises.

Workout 4: Front squat on a parallel box. Try a new max, a single or a three rep max. Next do glute ham raises, sled pulling with ankle straps, the reverse hyper machine, and standing ab work.

Workout 5: Rack pulls with the plates two inches off the floor for a max single, pull-throughs, incline sit ups, barbell rows, and the reverse hyper.

Workout 6: Heavy sled pulls with a belt around the waist for six pulls at 200 feet a pull. Then glute ham raises, dumbbell rows, Janda sit-ups, and the reverse hyper. Janda sit-ups, named for Professor Vladimir Janda, are done by hooking a band underneath the bench with the feet not anchored to eliminate hip flexor involvement. Hold on to the band, press your heels downward, push out on the abs, and pull up on the band.

Workout 7: Cambered bar good mornings. First bend over close to parallel. Now squat as low as comfortable and then raise up. Work up to a single or a three rep max. Then do pull-throughs, snatch grip rows, standing abs, side rows for obliques, and the reverse hyper.

Workout 8: Arched back good mornings. Remember, when doing a good morning, the bar must be in front of the knees. If not, it is a quarter squat. Work up to a max single or a triple. Pull a sled backward for six trips of 200 feet each. Barbell rows with a close grip, Janda sit-ups, and the reverse hyper machine.

Workout 9: Concentric safety squat bar good mornings. Crawl under a bar that is suspended three feet off the floor and do good mornings. Do a max single. Then glute ham raises, chest supported rows, standing abs, and the reverse hyper.

Workout 10–14: Band deadlifts on a platform. Here, you can use one or two mini-bands, or purple, green, or blue bands. This is workout 10–14 if you use a different strength band each of these weeks. Work up to a max single. Then chest supported rows, glute ham raises, standing abs, and the reverse hyper machine.

Workout 15–17: Suspend the Buffalo bar or 14-inch cambered bar or do Zercher squats with a suspended bar. This is workout 15–17. Then pull a sled with a power belt for four trips for 200 feet backward. Then dumbbell rows, Janda sit-ups, and the reverse hyper.

Workout 18: Box deadlifts off a four-inch box for conventional dead-lifts.

Workout 19: Sumo deadlifts off a two-inch box. Then do hanging leg raises, pull-throughs, and the reverse hyper machine.

Workout 20–22: Belt squats off a low box. Workout 21 is off a parallel box. Workout 22 is off a high box. For these workouts use a very wide stance. If you use the same boxes but with a very close stance, you now have workouts 23–25.

Workout 26: One-legged squats with a straddle stance. Support the back foot on a box while the front foot is far out in front. This will build the entire leg while increasing flexibility in the hip and groin. Then do Janda sit-ups, backward sled pulling for six trips of 200 feet each, side bends, and the reverse hyper machine.



Here you have 26 workouts, which is not even close to the amount we do. There are many methods combined in our workouts (concentric, eccentric, accommodating resistance, flexibility, awareness, and coordination). Do a new task each week and max out continuously with exercises that build strength-speed.

Speed Training for the Deadlifts

These can be done on either dynamic squat day or max effort day. When using 60–70%, do between 6–10 singles. The rest intervals are important, 30–45 seconds between singles. Do not do reps on speed deadlifts. The reason for this is that no eccentric work is being done during a deadlift. The CNS is stressed more when deadlifting than when squatting or benching so do only the optimal number of reps according to Prilepin's table, not the maximal number. All the speed pulls should be very fast.

If a Tendo unit is available, results between 0.9 m/s and 1.2 m/s are optimal.

Bands: The most common method is to place mini-bands over the bar. Depending on how explosive you are, train with a bar weight between 50–55% of your max. Use about 80–100 lbs of band tension on the bottom and 180–220 on the top.

Light band tension: Again, use bands over the bar but use a band tension that is light at the start and about 100 lbs on lockout. Use 70% bar weight.

Lightened method: Attach blue bands over the power rack pins at 5–6 inches off the floor. This will cause the bar weight to be close to zero at the start. At the lockout, a true bar weight will be released. Use 70% of a 1RM.

Chain pulls: Attach 5/8-inch chains to only the front of the platform and drape a five-foot length of chain over the bar. This will cause a moveable static overcome by dynamic effect. Set the chains evenly over the bar. Adjust them to fall off the bar at your mini-max.

BANDS AND CHAINS – RESEARCHING RESISTANCE

There are many things about strength that I don't understand. One, in particular, is how the heck did the father in "The Courtship of Eddie's Father" turn into the Incredible Hulk? Even Vladimir Zatsiorsky, Lazar Baroga, and Alexei Medvedyev could not help me with this. However, these men have taught me many things, most of all to think.

Using chains, bands, or weight releases is known as the contrast method where the weight is different at different points of the lift. Remember, you must work at all angles of a lift. Good equipment is important. Learn how to use a shirt, suits, and the training equipment available today. In the immortal words of the road warriors, "If you are going to a knife fight take your guns." That is precisely what we do. Don't let resistance stop you in your tracks. Use it to your advantage. Because the human body is stronger at some positions than at others, we are limited as to the amount of weight we can use in a certain movement. For instance, you may be able to do a quarter squat with 600 lbs, but you may be able to only full squat 400 lbs. We all know through practical experience that while doing a simple curl, the start of the movement is very hard



whereas the finish is somewhat easier because of changing leverage. This problem was first addressed around 1900 by Max Herz. His solution was the oblong cam, which he patented. Years later, the Nautilus line of exercise equipment tried to solve this age old problem, in my opinion, unsuccessfully. One lifter's strength will certainly be different from another lifter's at the same joint angle.

Let's go back to the 1960s and power rack training. A power rack will in one way address this problem. For example, let's say a lifter can deadlift 600 lbs off the floor. Utilizing a power rack with the weight two inches off the floor, he can pull, let's say 625, and four inches off the floor, 650. By sitting the weight as high as eight inches off the floor, he may be able to pull 750. In this manner, we have solved, at least partly, the problem of overloading or providing adequate resistance as joint angles change. However, it's difficult for some to display this new found strength from pin height to pin height. This can be explained by the fact that it is very seldom that one's body positions the same while pulling off the floor as while pulling off the rack. Isokinetics may be a partial solution.

But, as with most machines, you must follow the path of the machine, which is different from the path of a free weight. The path of a barbell is somewhat unpredictable at times. Another drawback is that prior to the start as well as the finish, there is no load bearing on the lifter with this type of apparatus. Is there an answer to the problem of how to overload or adequately load the body to match the body's increase in leverage? Yes, there is.

Accommodating Resistance

Everyone should know what accommodation is. Accommodation causes your performance to stagnate or decrease. Zatsiorsky stated that the response of a biological object to a given constant stimulus decreases over time.

Let's take a look to the past...on March 7, 1997, at the Arnold Classic, George Halbert benched a world record 657 (298 kg) weighing 220. George dropped to 220 on October 18, 1997, and made a 600-lb bench. In five months, he made 657 by doing special work with bands and chains. On speed day, which is Sunday for us, George does his benches with 335 for eight sets of three reps. This is slightly over 50%. The reps are very explosive. The three reps are completed within the same timeframe that his max single requires.

For example, a football team will practice for hours and hours, but when game time arrives, there are off-sides, holding, missed tackles, and fumbles. Why? Could it be they practice the game too much and not the parts of the game that cause the difficulties on game day? How can a high school basketball player like Labron James be the number one pick in the NBA? Is it because they have forgotten the fundamentals of basketball and merely play the game as a whole? Now, a junior high school player from Indianapolis is projected to be the top NBA pick after graduation next year. How? Are they concerned only with the entertainment value of the game and nothing else? Perhaps. Is that why we can't win Olympic gold with superstar millionaires?

The U.S. Olympic lifters have a technique day. Why? The last world record by a male U.S. Lifter, Joe Dube, was in 1969. Olympic lifters, like ballplayers, repeat the same activities over and over, only to stagnate after a short time. I had to mention Olympic lifters so that I can receive my fair share of hate email. I always have the door open at Westside for them but only Glen Pendlay has made the trip.

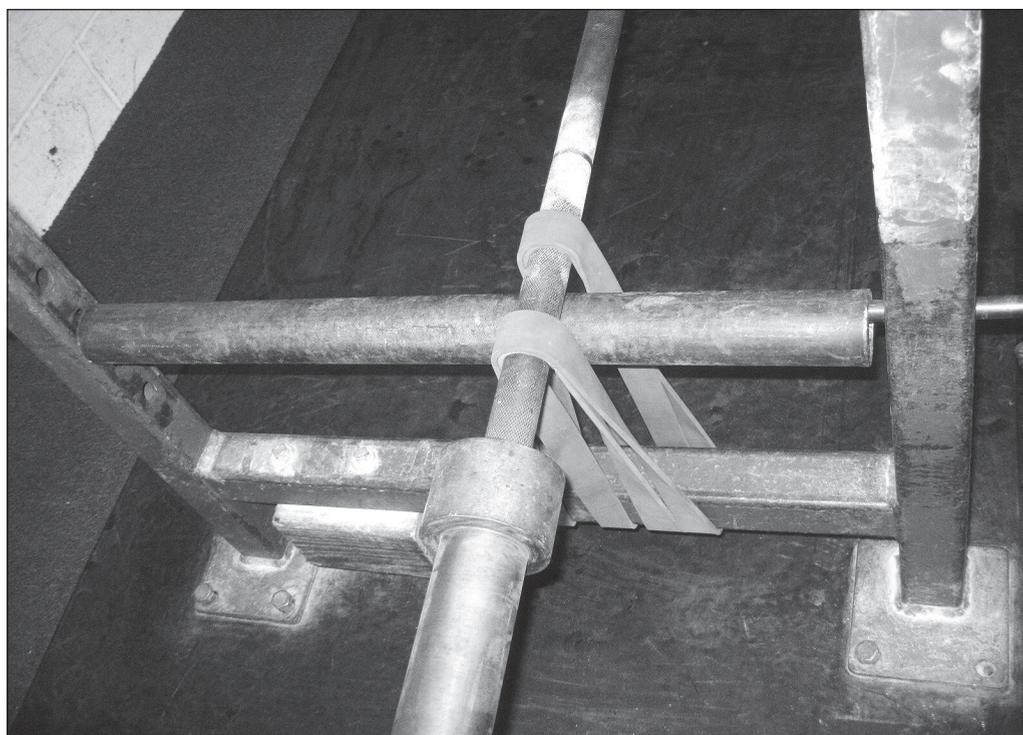
Of course, all of us can experience becoming stale. How can we train the squat without experiencing accommodation? At Westside, we box squat, but we change the box height occasionally or use a soft box (hassock) instead. Most of us change the width of our stance during the same workout or point the feet at different angles. Everyone carries the bar at the same place

on the back. We instinctively do this to take advantage of our best leverage. This is in itself good. However, what about the muscles you avoid training by doing this? How can they be trained? Using different bars can train neglected areas. We use a three-week pendulum wave, going from 50–60% in three weeks and returning to 50%. A safety squat bar may be used for three weeks. A second loading may be done with a cambered bar for the next three weeks. Then perhaps a straight bar or even a MantaRay can be used for a wave. To reduce accommodation to a greater extent, one must include methods to accommodate resistance. This is done by including chains, bands, or weight releasers to the amount of bands and chains added to the barbell weight.

Another proven method of changing the amount of work being done is to change the length of the rest time between sets. This is reflected by the intensity zone being used. Speed-strength rest intervals can vary from 30–90 seconds between sets. For circa-max weights, the rest can be 60 seconds to two minutes and 30 seconds. This max depends on your GPP. For bench pressing, the same procedure is used. For dynamic benching, one can use chains, bands, weight releasers, or a combination of the three. Instead of the regular bench press for speed work, one can floor press. This breaks up the eccentric/concentric chain. A different method is to do speed work by lowering the bar to power rack pins. Relax the muscles on the pins and then press up. The type of bar used can also disrupt the process of accommodation. You can use a fat bar, a Buffalo bar, or a MacDonald bar with a five-inch to one-inch camber. Every time you change something and master its performance, you become a better lifter or athlete.

The deadlift can be trained by doing box deadlifts off a two- or four-inch box, or you can do rack pulls varying from having the plates two inches off the floor to having the bar set at knee height or slightly higher. It is important to do both sumo and conventional styles.

The deadlift can be done with jump-stretch bands over the bar. A doubled mini-band adds 220 lbs at the top and about 100 lbs at the floor level. A monster mini-band will add 280 lbs at the top and 125 at the start. For more top end tension, a single light band adds 100 lbs mostly



at lockout. The lightened method is also used frequently at Westside. This is done by suspending the bar in strong bands five feet off the floor. This reduces the bar weight by 135 lbs at the floor level. At lockout, the entire bar weight originates from the bands. This creates a different type of speed of resistance. Don't forget good mornings of different types.

Finally, let's look at the Olympic lifts. We know because of accommodation that it is not advised to use standard exercises for a long cycle. The loading system must change as well. We have found that a three-week wave works best.

A note to college coaches: A full clean and jerk is two lifts: a front squat and the jerk. If one simply tries to increase the clean and jerk, it is only a matter of time before failure strikes. A lifter may be quick to jump under the bar but may not be able to recover from the squat. The front squat must be pushed up, not by front squatting but by doing special exercises for the front squat. For example, back squat off a low box with a full two second relaxed pause or front squat off a box with a long relaxed pause. Use a variety of bars (e.g. Buffalo bar, 14-inch cambered bar, safety squat bar) in addition to the reverse hyper machine, pull-throughs, 45-degree hypers, heavy glute ham raises, inverse curls, belt squats, weighted sled pulls, and pistol squats. Use bands and chains plus weight releasers. For pulling, use at least two grips for cleans and snatches. Stand on a two-inch platform for power cleans and power snatches. Do straight leg power cleans and power snatches. Use kettlebells with one or both hands. Do functional isometric pulls adjusted with bands. This is just a small list.

It must be said that in the beginning, proper form should be taught early in the training of novices. Then, more exercises for strength are added to the training. This is the conjugate method where special exercises will correct technical flaws. Most of the exercises I have talked about are close in form to the classical lifts. Chains or bands are used to accommodate resistance (40–60 lbs of chains, 100–160 lbs of resistance with bands). If one does the power or Olympic lifts with only a barbell, his or her potential to create additional speed or force is limited by the one-dimensional weight on the bar. If one is to do speed work, he or she should use no more than 50% for the 8–10 sets of three reps. This is based on a no-bench shirt record and is for explosiveness, strength, and acceleration. This is exactly why you must use bands or chains to accommodate resistance. Without them, the bar moves too fast at the top. George knew his mini-max, or sticking point, was about 2–3 inches from the top so after speed work he hit the triceps first, then the delts and lats. George also did a small amount of lat and triceps work on Monday and Friday.

On max effort day, Wednesday, George has a favorite exercise. He will use a bar with a five-inch camber. He places two, 2 x 6s on his chest. By doing this, the bar descends only one and a half-inches below his chest, not the full five inches which would be too stressful for our lifters. He will use flex bands, which add 160 lbs of tension to the bar and will either work up to a max single or do three sets of three reps. His best was 475 for three triples. With the flex bands, it is 635 at the top.

The flex bands provided added eccentric overload, which not only builds muscle size but also increases reversal or starting strength. Because of the added tension, George will use the bands for only three weeks because of the additional muscle soreness.

George also likes to do floor press with chains. Because the bar rack is so close to the floor, the chains are dropped over the sleeve of the bar. George will warm up with the bar and then add chains until he has 200 lbs of chain. Then weight is added, and he works up to a max single. His best is 445 plus 200 lbs of chain. George will always go for a new max and many times he misses. As the chains come off the floor and the weight accumulates at the top, he sometimes falls at his mini-max, or sticking point. He pushes as hard and as long as possible at this point, about three inches from lockout. By doing this, he is working at his weakpoint and devoting valuable time to it.

At the Arnold Classic, when the 298 kg hit his sticking point, he blew past it to lockout. How? He developed a tremendous start and increased the bar speed on speed day. On max effort day, the chains develop and teach acceleration merely through trying to outrun the chains. Also, when George misses at his mini-max, he is performing functional isometrics in the best possible way. As the chains add to the weight of the bar, we can determine the precise point at which George fails. Now, we know where his weakpoint is with a particular weight. Conventional isometrics (that joint jarring pressing against immovable pins) is unnecessary. The bands work in the same way but with added eccentric work from the bands pulling you down. This additional eccentric work also builds muscle mass.

After each workout, George tries to increase his triceps work in volume and weight. The triceps are worked first after the main exercise followed by the delts, lats, and upper back. Remember, this is done after dynamic day work on Sunday and after max effort day work on Wednesday.

You must bring up your weaknesses through special work and develop special strength such as starting, accelerating, eccentric, and concentric strength. We do primarily slow work on the stability ball. Always try to cover everything. At 50-years-old, I benched 600 on February 15, 1998. I like to do three sets of heavy (155s or 125s) dumbbells to failure on a stability ball. This is commonly known as the repetition method. We will throw in weight releases on speed day or max effort day, get a good response for a few weeks, and then switch to something else.

Using Chains in Training

There are many keys to success, but two invaluable ones are accelerating strength training and accommodating resistance by adding chains or bands or sometimes both. Chains and bands are used in all of our training, be it the dynamic method for speed-strength and acceleration or the maximum effort day to develop absolute strength. In the bench press, bands and chains have helped 17 of our lifters achieve 550 or more and seven lifters have done 600 or more. When I talk about bench training, I am referring to my lifters with a 550 bench or better. That's who we experiment with. On speed day for the bench, while doing the 8–10 sets of three reps, the chains are attached in the following manner. Loop a 1/4-inch link chain with a hook around the bar sleeve to regulate the height of the 5/8-inch link chain (five feet long). Run the 5/8 chain through the metal loop and adjust it so that half of the 5/8 chain is lying on the floor while the bars in the rack. Use 60% of a no-shirt max on the bar. For example, if your max is 500, put 300 lbs on the bar. When the bar is on your chest, only the weight of the bar should be on your chest. That is, all the 5/8 chain should be on the floor.

If your best bench is 250 lbs or less, use one pair of 1/2-inch link chains. These weigh 23 lbs a set so you are locking out an extra 11.5 lbs. A 350 or more bencher should use one pair of 5/8-inch link chain. By doing this, you will be locking out an extra 20 lbs. (They weigh 20 lbs each but half is on the floor at lockout.) A 500-lb bencher can use both the 5/8- and 1/2-inch chains for a combined added weight of 31 lbs. A 600 bencher uses two, 5/8 chains and sometimes adds a 1/2-inch chain for 40–51 added lbs at lockout. You can experiment on your own, but remember this process is to build bar speed and acceleration. It also teaches you to launch the bar off your chest. A special note: Lower the bar fast and try to catch and reverse the weight as fast



as possible. Never pause. On max effort day, warm up to 315 and then do a single. Next, add a 5/8-inch chain on each side and do a single. On the next set, use two sets of chain, then three sets, and so forth. This is similar to how a bench shirt works. The weight is less at the bottom and much greater at the top. The chains build not only acceleration but also a fast start and a strong lockout. For floor pressing, simply drape the 5/8-inch chain over the sleeve of the bar and you're ready.

JM Blakley and George Halbert do a lot of floor presses like this. George will use 200 lbs of chain (five sets of chain) and work up to a single. His best at a body weight of 220 is 440 plus 200 lbs of chain, which is 640 at the top. JM uses a different combination of weight and chains. His best was 400 lbs on the bar with seven sets of chains for a combined weight of 680 at lockout. Try any weight-to-chain ratio. Feel free to experiment. A cambered bar can be used as well. These are a few methods to add to your max effort day.

While many people call me for advice, others give me advice that I pass along. A gentleman, whose name I don't remember, related to me some training he had done with chains. This was a few years ago, but we finally got around to using chains in an experiment with Amy Weisberger (a world champion whose best total in 12 weeks went from 975 to 1025 at 123), Vanessa Schwenker (a national champion whose total went from 1030 to 1100 in 12 weeks), Traci Tate (a novice lifter who increased her bench from 180 to 210), and Dave Tate. (Dave Tate, Traci's husband, is a 308 with a previous total of 2028. He went from 782 to 830 in the squat, 540 to 585 in the bench, and 705 to 720 in the deadlift for a total of 2135. After being stuck at 710 on a low box squat for two years, he made 765 after six workouts.) Now with these examples in mind, here's how we use chains in our training.

The chains are five feet long with a 5/8-inch link size and weighing 20 lbs each. They can be found at most industrial tool supply companies. For bench pressing, we will attach the chains to the bar so that when the arms are fully extended, half the chain is resting on the floor. After lowering the bar to the chest, all the chain is on the floor. By doing this, the original bar weight is maintained. Let's go over this again. If you have 300 lbs on the bar plus 80 lbs of chains attached (two sets of chains) with half the chain already on the floor, that adds up to 340 at the lockout position. But when the bar is lowered, all the chain is on the floor and the total weight on the bar is reduced to the original 300 at chest level. As you press, the weight gradually increases to 340.

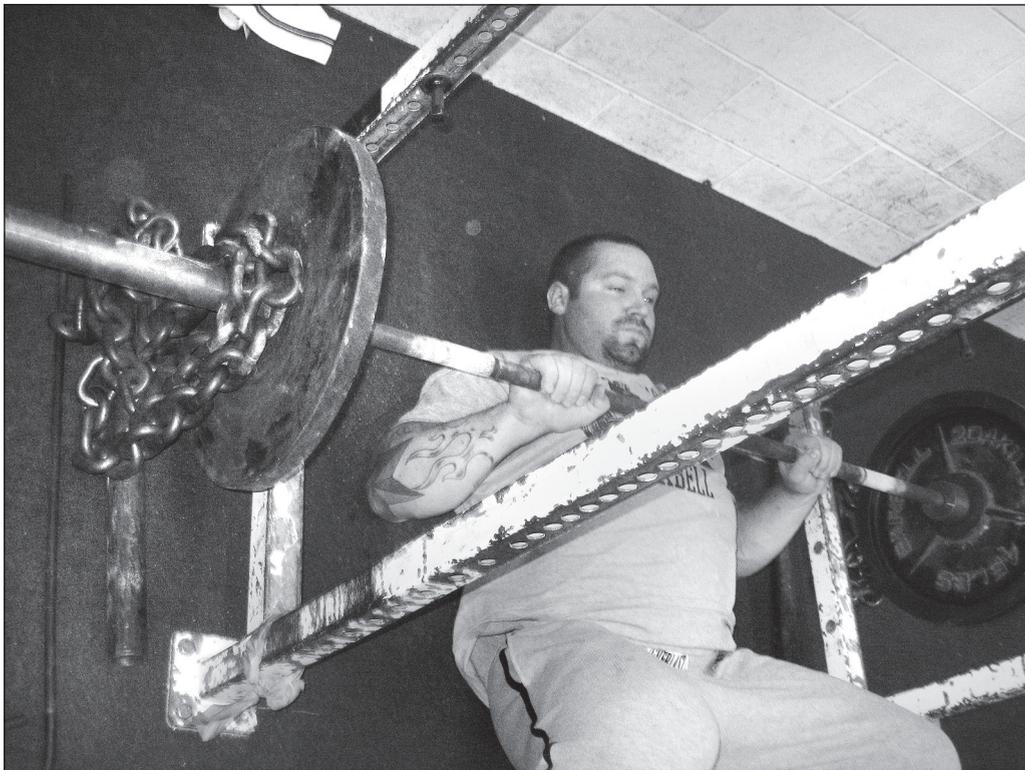
Training with chains in this manner accomplishes three things:

1. We have maintained our original weight in order to use the correct percentage for explosive training.
2. We have overloaded the top portion of the lift, which normally does not receive sufficient work because of increased body leverage at this position.
3. A neurological response to build explosive strength is developed. This training will train you to drive to the top because you can't slack off at the top phase as you used to.

Those who bench press 400 lbs or less should use 40 lbs of chain, and those who bench over 500 should use 80 lbs of chain. Those in between should experiment with both amounts and aim for adequate bar speed. Remember, half the chain should rest on the floor when the bar is racked. Lifters who have a sticking point at or slightly above the knees in the deadlift will also find great benefit from using chains. Attach the chains to the bar with a light weight chain to adjust where the heavy chain will leave the floor and contribute to the weight on the bar. Tom Waddle uses 405–455 of regular bar weight on the deadlift bar. To that, he will add up to 200 lbs of chain. As he lifts the 405, it gradually turns into 605 as the chains leave the floor.

The chains compensate for added leverage near the lockout. If you are weak at the top, this will solve your problem. Also, it will develop starting strength. Because the chains make it more difficult to press as the bar ascends, you will instinctively try to accelerate the bar from start to finish. The effects of special training normally occur in 2–4 weeks, but to my surprise, the training effect with chains is immediate.

As an experiment, we loaded the squat bar to 415 and did two reps. Next, a set of chains was added. They were attached so that all the chain weight was on the bar at the top of 455 and half



was unloaded at the bottom or 435. Four additional sets were done for a total of five with 415 or more. On set six, two sets of chains were placed on the bar. The top weight was 495, and the bottom weight was 455. On set seven, three sets of chains were used. The top weight was 535, and the bottom weight was 475. For set eight, four sets of chains were used. The top weight



was 575, and the bottom weight 495. For set nine, five sets of chains were used. The top weight was 615, and the bottom weight was 515. These sets were done with 50 second rest periods. Next, we removed all the chains so that the bar was reduced to the original 415. The box, which was already an inch below parallel, was lowered another inch. Four more sets were done. To our surprise, they were more explosive than our first sets with 415. After 13 sets with 50-second rest periods, we were actually more explosive because of the chains. This immediate benefit is unheard of with conventional training.

Now on to squatting. At Westside, we all use chains and bands. Here's how. First use a set of 1/4-inch link chains that attach to the bar sleeves. We suspend a metal ring from the 1/4-inch chains, which regulates the height of the 5/8 chain from the floor. Loop the 5/8-inch chain through the metal ring so about three chain links are lying on the floor when you

are standing. When you are sitting on the box slightly below parallel, half of the chain will be unloaded onto the floor.

How much chain should you use? If you squat 350 or less, use one set of 5/8-inch chain equaling 40 lbs at the top. If you squat about 600 lbs, use about 60–70 lbs of chain at the top. If you squat 800 lbs, use 80–120 lbs of chain at the top. As you can see, about 10% of your squat weight should be added with chain. If you are doing sets with 400 on the bar, you will be standing up with 520. An 800 squatter whose top training weight is 480, or 60%, will add 80–120 lbs of chain to the bar equaling 600 at the top.

I don't sell chains, but I hope you buy this idea. It is one of the most effective ways to train that I have encountered. The chains will build starting strength and overload the body at the top of all three lifts, where due to added leverage, the muscles receive little work compared to the bottom portion of the lift. At the bottom, the chains work as a lightening device by enabling one to handle the most weight at any one position of the lift. I am passing this on to you in the hopes of helping you reach your goals no matter what they are.

The Force—Velocity Curve, Science Behind Bands

Now, we will look at the relationship between force and velocity. We know that while using light loads an increase in speed has little effect. An example is throwing a whiffle ball. The load is so light that even throwing it twice as fast will propel it no farther. In contrast, strength becomes much more important when the load or external resistance is increased. When doing a barbell lift,

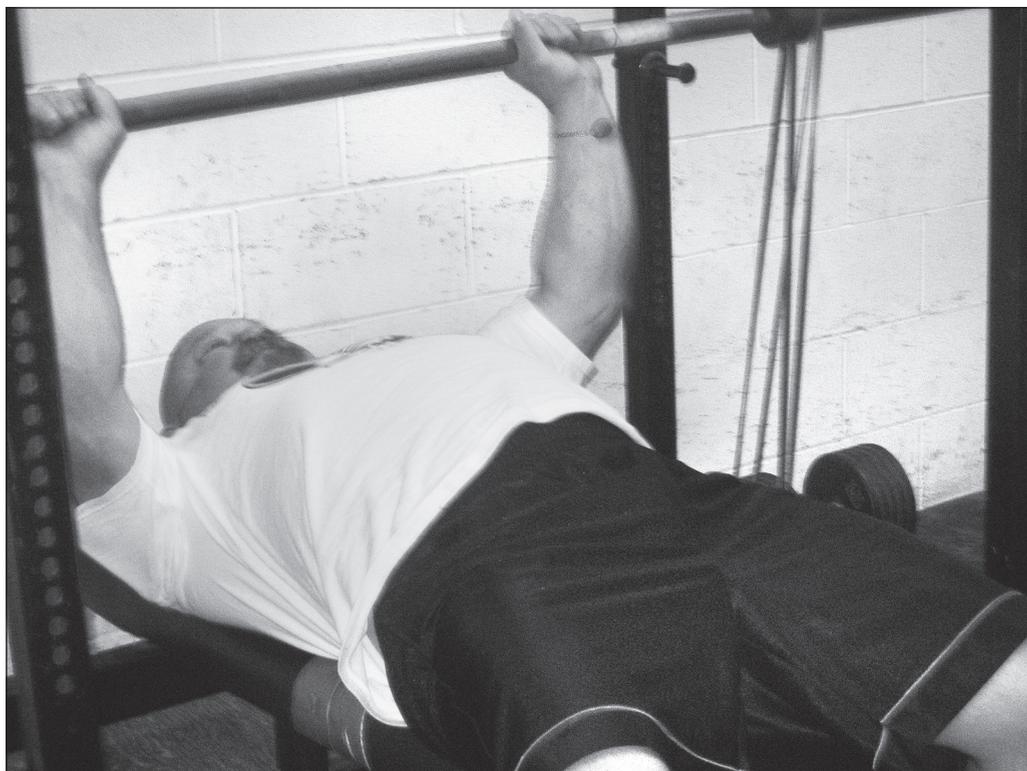
the bar speed at the beginning is zero, and of course, at its completion, it is reduced to zero again. After accelerating to top speed, it will decelerate as completion is reached. If too much weight is used, the start may be too hard for the lift to be completed. If too light a weight is used, although the start will be quick, it will be much too light at its completion to produce a beneficial effect. In either case, an unsatisfactory result will occur.

This brings us to a solution: accommodating resistance. One way of achieving this is with isokinetic devices with variable speeds. They can be set for fast speed for speed-strength or slow speed for strength-speed. But there are drawbacks to these machines. Most don't have eccentric motion, and because they are machines, they will not increase one's stability. However, by using rubber bands with barbell weight, many things can be accomplished.

When training with bar weight alone, the weight is too heavy at the start or too light at the top. If only bands are used, the weight is too light in the bottom and too heavy at the top. With a combination of bands and bar weight, you can truly accommodate resistance. Whether you are training for speed-strength or strength-speed, the ratio between band tension and weight can be altered to accomplish your goal.

When implementing the theory of accommodating resistance, one must look at the relationship between force and posture. At different joint angle positions, the amount of weight lifted will differ because of one's mini-max, or sticking point. At some joint angles, great force can be generated. For example, the deadlift is a fairly simple task. Yet one lifter will experience a hard start and an easy finish and another will blast the bar off the floor but have difficulty locking it out. The combination of band tension and bar weight will allow maximal tension throughout the entire range of motion, not just at the weakest point. This is the peak contraction principle at its best.

The bands may not out-accelerate gravity but will greatly increase the eccentric phase as



illustrated by our experiments with one of our 1008 squatters, Matt Smith. With 550 lbs of only weight on the bar, the eccentric portion took 0.9 seconds and the concentric 1.35 seconds. With a combination of weight and bands (375 + 175, 550 at the top and 375 at the bottom), the eccentric phase was 0.55 seconds and the concentric 0.76 seconds. When only

bands were used (750 at the top and 550 at the bottom), the eccentric phase was 0.53 seconds and the concentric 0.57. Bands work like muscle and connective tissue. They lengthen and contract in addition to absorbing kinetic energy.

The Effect of Bands—Virtual Force

To test the effects of bands on speed-strength, Anu Turtiainen, Chuck Vogelpohl, Mike Ruggiera, Tony Hutson, Paul Childress, and Keiran Kidder use 40% bar weight and 25% band tension at the top and 10% band tension at the bottom. This equals 65% at the top and 50% at the bottom: 405 lbs of bar weight, 250 lbs of band tension at the top, and 100 at the bottom. The above mentioned lifters all squat 1000 or more officially.

For strength-speed, or slow strength, the band tension is 44%, or 440, at the top and 20%, or 200, at the bottom. The bar weight ranges from 450–500 lbs. The top would equate to 940 total and the bottom 700 for the top weights used for five sets of two reps. This phase is known as the circa-max, or near maximal phase.

The relationship between force and posture can't be matched correctly with barbell weight alone. Weights are much too heavy at the bottom and too light at the top. Bands alone are too light at the bottom and too heavy at the top. With a combination of bands and weight, the relationship between force and posture can be matched more correctly.

Compensatory acceleration can't be accomplished effectively with light or moderate weight because these weights are too light at near completion. At this point, you are much stronger than the load and a deceleration occurs. The answer is to use bands or chains. If you have ever lifted in a power rack, you have noticed that as you raise the pin levels, you can lift more. Let's say each time you raise the pins two inches, you can lift 50 more lbs. It makes sense to attach bands to add that 50 lbs every two inches. If you place your lowest pin record on the highest pin, it will be much too light. Conversely, if you place your highest pin record on the lowest pin, you can't budge it. By merely attaching bands to the bar, you can maximally lift the most weight at each level (i.e. accommodating resistance). This is also a contrast method where the weight is much heavier at the top than the bottom. But, unlike using weight releasers where the additional weight is released at the bottom, it is regained during the concentric phase.

Zatsiorsky states, "The magnitude of weight that an athlete can lift in a given motion is limited by the strength attainable at the weakest point of the full range of joint motion" (*Practice and Science of Strength Training*, 1995). In other words, muscles are activated maximally only at the weakest point of motion (peak contraction principle). There are four methods to approach this concept: (1) accommodating resistance, (2) the peak contraction principle, (3) accentuation of muscular efforts, and (4) ignorance of the issue, the approach followed by most. At Westside, we use the three methods that work all the time.

When using chains, the proper method is to have them unload at the bottom, or starting position, known as the concentric phase. Using a large load of chain at the bottom teaches you to explode at the start to enable you to overcome the additional load as it reloads onto the bar becoming heavier toward completion.

Bands have an added value of kinetic energy. A larger, moving mass results in more kinetic energy. In reversible movement exercises such as squatting to a box, an increase in mass leads

to a decrease in rebound velocity, but a moderate increase in velocity when approaching a box leads to an increase in rebound velocity. This is why box squatting is essential to the stretch reflex action. The stretch reflex lasts up to two seconds and longer in trained athletes (Wilson, *Supertraining*). Unlike a conventional squat where you lower yourself to a certain position and reach zero velocity at that point before overcoming the load, in a box squat you are moving when contact is made. This is kinetic energy. This helps increase the velocity of the eccentric phase, causing added kinetic energy (overspeed eccentrics). I have named this process virtual loading.

To observe an example of virtual loading, jump on a bathroom scale and see what it registers for a split second. The readout is much heavier than your actual body weight. This is virtual force from virtual loading. Joe Dell-Aquila, who has a doctorate in physics, helped to name this phenomenon.

A test was performed with a 970-lb squatter, Matt Smith (who also has a 2470 total at 345 lbs). First, Matt squatted 550 of barbell weight only. The eccentric phase was 15 inches to the box. The duration of this phase was 0.9 seconds. The duration of the concentric phase was 1.35 seconds. Dr. Akita, who has a doctorate in calculus, measured the time in this study. Then the bands were attached to the bar, producing a weight of 750 lbs at the top and 550 at the bottom on the same height box. The duration of the eccentric phase with bands was 0.53 seconds. This was due to the over-speed eccentrics caused by the bands pulling Matt down, causing added kinetic energy as stated by Zatsiorsky in *Science and Practice of Strength Training*. The duration of the concentric phase, returning the bar to the top, was 0.57 seconds. That's right, 0.57 seconds with an extra 250 lbs of resistance at the top.

To develop speed in the eccentric phase, six males who squat 1004–1080 with body weights ranging from 220–365 used four phases of special strength work.

Phase I: Lactic acid tolerance training

Squat sets were performed, 15–20 sets of two reps with about 45-seconds rest between sets. One quarter of the weight was contributed by bands.

Phase II: Strength-speed

This phase is nearly impossible and dangerous for the untrained college student. Band tension is 60% of the total bar weight. To lift limit weights, one must be under max or near max tension for the length of time it takes to complete your max squat. This may be up to three seconds.

Phase III: Speed-strength

Squats were done with a bar weight of 40% for 10–12 sets of two reps. The band tension at the top was 200 lbs and 100 lbs at the bottom.

Phase IV: Circa-max phase

This phase employs a three-week pendulum wave. The bar weight is 45–50%. The bands contribute 40%. This is slightly under the recommended 90–97%, but the bands cause a total reduction in momentum. Also, eccentric work causes the most muscular soreness. The over-speed is very stressful on the lifter. Five sets of two reps are done.

When done correctly, the bands will exert a force on the body over a distance (in Matt's case, 15 inches), resulting in potential energy. That energy is transferred into the muscles and soft tissues of the body. This is a form of the shock method, or plyometrics. Plyometrics should be used only by those capable of squatting two times their body weight. The box makes it possible for not only the feet but also the hamstrings and glutes to absorb energy. The amount of kinetic energy an object has also depends on the object's mass as well as its speed. That's why sitting on a box fully is most important. Remember also that the stretch reflex lasts a full two seconds so there is no need to touch and go off the box.

When using chains, the chain must be almost totally deloaded onto the floor. This means that one can't merely connect a large chain to the sleeve on the bar. Rather, one must use a special attachment on the bar to hook the working chains to. When most of the resistance is made up by bands, the slower the bar travels. Thus, strength-speed is being developed. As the bar weight and band resistance is lowered, bar speed is increased for the development of speed-strength and even explosive strength.

Training with the Bands – An Overview

Bands are a little tough for some on speed day because of the added eccentric properties they create. Also the weight resistance is much more radical at different positions. It's much less at the bottom but much greater at the top. Remember, the bands are literally pulling down on you.



Bands have many benefits:

- accommodating resistance
- added kinetic energy in the eccentric phase by out-acceleration
- gravity
- similarity to muscle and connective tissue
- tremendous stability

When using bands, be careful not to overdo it. The bands produce a large amount of eccentric overloading and can cause excessive soreness, but they are more than worth it. They build the lockout as well as the start. One realizes very fast that you have to outrun the bands so you develop a fast start to enable you to lockout a heavy weight.

The most popular methods using the bands are as follows. On max effort day, do board presses with four, 2 x 6s. Loop



the bands through the bottom supports of the bench and then around the sleeve of the bar. When using 4-boards, the tension is never released. Because of this, a quick start is impossible and locking out a heavy weight is really tough. To make it even tougher, use a cambered bar. JM presses with bands are very popular at Westside. To make it as tough as possible, use several bands. Lower the bar straight down, aiming between the nipples and chin and stopping 4–5 inches off the chest, Then press back up. Use a close grip.

Bands and chains are often used for triceps extensions. This will radically change the strength curve of the movement by accommodating resistance (lifts are usually easier at the top). Thanks to Doug Ebert for the following band exercise. Attach a blue band to the bar and start with 95–135 lbs because this is tough. Then take a pink or green band, depending on your strength, twist it once, and place it around your upper back so the tension is pulling back your hands. Now lie down on the bench, stretch the band to grab the bar, and start benching. This “double” tension is unreal. Also, try the lightened method recommended by Carl of Jump-Stretch. Attach a set of blue bands to the top of the power rack with a slip knot. Load the bar to 135. It should be almost weightless at the chest. This way you can bench 135 lbs more than normal. This builds tremendous power at lockout, which is perfect for bench shirts.



To use bands for squatting, if you squat 650 or less, use green bands. If you squat more than 650, use blue bands. Here are two examples of 900 plus squatters. Billy Masters and Dave Barno used a top weight of 500 lbs and 150 lbs of tension with blue bands. Billy did 909 and Dave did a perfect 925. Neither train at Westside, but they use our methods. When squatting, wave your training weights from 50–60% in 3–4-week cycles. Do mostly

6–8 sets of two reps with 45-seconds rest between sets. For max effort work, one can choose a bar weight of say 400–500 lbs. Do a single and then add a set of chains. Keep doing singles and add a second and third set of chains until you break a PR or miss.

You can do the same with flex bands. Good mornings are a great exercise to do with chains and bands. High pulls with the pink or green bands are also great. I have seen one of our lifters with a 600 deadlift go to 670 in six months by using bands on the deadlift. Bob Young used 275–315 on the bar with about 200 lbs of tension from the bands. We use the platform that Jump-Stretch sells with their bands to do this exercise. If you want to excel at powerlifting or any sport, you must develop speed-strength, increase acceleration, and gain absolute strength. Bands and chains can be instrumental in developing these aspects of strength. I highly recommend that you try them as soon as possible.

OVERCOMING PLATEAUS

There are basically four reasons for failing or succeeding:

1. physiological
2. psychological
3. technical
4. exercise selection

Let's talk about psychological. Don't have deadbeats hanging around you. Stay in a positive mental state. If your training partner can't hang, no matter what their age, give them the hook. You must be competitive even while training. But you also must want your training partner to succeed so you will be pushed even more.

On maximum effort day, go until only the top man is left. On dynamic day, try to hurt your training partner with short rest periods. To win, you have to put yourself through hell. Have training partners that want to kick your ass all the time (during the workout). Trash talk is always present at Westside. A new lifter at the gym wanted to load my plates for me during one of his first workouts. I asked him if he respected me. He said he did. I said, "If you respect me while we train, Ill boot you out of here." He got the idea. When I was young, I didn't want to lose to an old man. Now that I'm an old man, I don't like to lose to young men. I cop an attitude, and that attitude kept only five men on the top 100 list kicking my ass (and I know where they live).

What about the physiological aspects? This encompasses several aspects of training such as the development of starting, accelerating, absolute, and special strength. These are primarily developed with barbell training. The correct loading on the dynamic day as well as the maximum effort day is essential. The physiological aspects also include the development of muscle hypertrophy. This can be accomplished with dumbbells, sled work, and the proper use of special exercises such as chins, rows, triceps extensions, and delt raises. Exercises that raise work capacity or general physical preparedness (GPP) are also essential, especially for drug-free lifters. Men such as Bill Gillespie and Sean Culnan are perfect examples.

I will sum up the psychological aspect of training with the words of Dr. Mel Siff and Dr. Yuri Verkoshansky, the authors of *Supertraining*. A high degree of performance depends on the motivation to reach certain goals, aggression, concentration, focus, the ability to tolerate pain and cope with anxiety or stress, the development of a winning attitude, and the ability to manage distractions and relax. While striving to develop the best method of resistance training, we are led down many paths.

The three most common approaches are:

1. accentuation
2. peak contraction
3. accommodating resistance

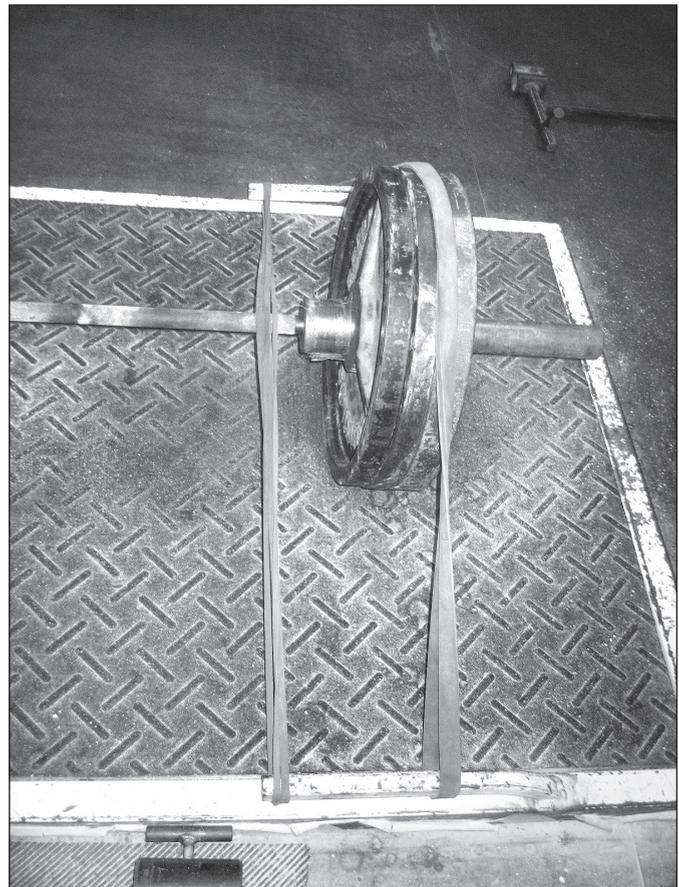
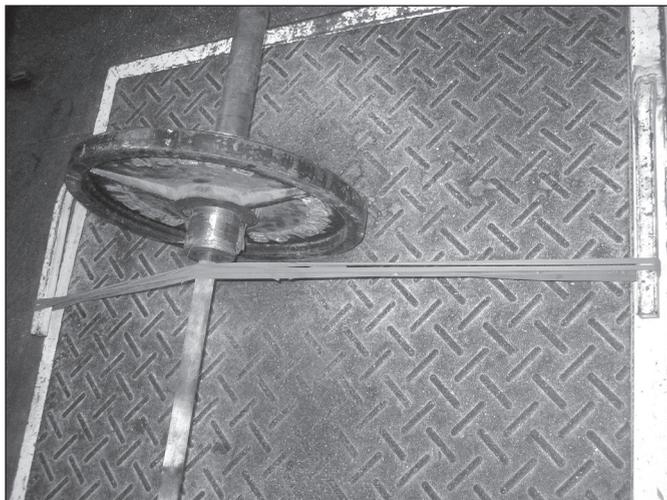
Accentuation: Accentuation occurs when exercises are used at precise angular positions in which maximal efforts are developed during a specific, sport movement. The greater the force, the greater the velocity.

Peak contraction: With the peak contraction principle, maximal force is developed at the weakest body position such as at the start of a pec deck.

Accommodating resistance: Accommodating resistance refers to maximizing muscular tension throughout the entire range of motion. This is done with bands or chains added to the bar. This is called the reactive method. The weight is different at one position of the lift than another. This causes one to react to a contrasting effect. Reactive methods build power and explosive strength by imposing great demands on the central nervous system. The most common reactive method is plyometrics. But because this system is well documented and thought out, the term powermetrics applies. What we are looking at is resistance training with a second or third type of resistance other than barbell weight such as bands and chains.

The Mini-max Point

We have found that using only bar weight causes the optimal training weight to be too heavy at the bottom and too light at the top of the lift. Bands on a bar with no weight make the resistance too heavy at the top and too light at the bottom. However, a combination of both bands and weight creates a near perfect



situation. But is it? Because of the mini-max position, when hip extension strength is greatest, the knee extension is poorest. The opposite is true in other force-posture situations. The maximum strength value of hip extension is 150 degrees. For knee extension, it is 120 degrees. For the layman, what does this mean? It simply explains why some are strong at the bottom of a squat or deadlift and bench press while others are strongest at the top.

The low back can be a factor in how strong one is at the halfway point. The same is true in the bench press. Bands added to the bar can accomplish many things. They can help reduce bar deceleration on the concentric phase, accommodate resistance, eliminate momentum, and increase the stretch reflex function by causing over-speed eccentrics, producing a virtual force effect which is a loading that is there but not recognized. How can people with different mini-maxes benefit from the same band training?

The staggered system is a method of combining chains and bands of different amounts.

Method 1: Bands are available of variable tension. We can alter the tension by placing more than one band on the bar (up to three) but not just on the bar. We may place one band over the bar and then a band over 25-lb plates on the bar or over 45-lb plates. Where the strongest band for loading or deloading is placed depends on your mini-max.

Method 2: Chains are used when you are looking for an abrupt loading effect. For the strongest squatters (800 plus), we use a combination of bands for a constant loading/deloading effect and 120–160 lbs of chains that can be totally unloaded at the bottom, partially deloaded, or completely reloaded at the top.

Method 3: Ano Turtiainen, the super 1080 squatter from Finland, uses bands over the bar and then adds weight releasers, overloading the eccentric phase. Of course, when the releasers unload, a contrast effect results. This causes a lighter concentric phase.

Method 4: Ano also attaches a strong band to the top of the Monolift to create a lightened effect. He will set the bands to reduce the load by 130 lbs at the bottom. When the load is lifted, the 130 lbs is again applied to the bar.

Method 5: To ultimately overload the eccentric phase, weight releasers and the lightened method are used concurrently.

Method 6: Use chains only, not bands with the weight releasers. Chain weight does not cause over-speed eccentrics. To achieve the highest results, switch the combination of resistance often, usually every three weeks. This places maximal demands on the body regardless of your mini-max.

Never do sets with a large amount of band tension and then remove the bands and try a heavy weight. Your timing on the eccentric phase will be totally off. This was confirmed by Professor Akita. Using a large percentage of bands above 40% causes a super over-speed eccentric phase lasting an average of 0.5 seconds. With pure barbell weight, it is 1.5 seconds. The reversal muscle action is confused. This occurs in squatting or benching.

Staggered Loading Effect

For more staggered deadlift loading, try using mini-bands doubled over the bar. Here at Westside, the added band tension looks like this:

- Mini doubled adds 220 lbs
- Jumbo mini doubled adds 280 lbs
- Light single adds 100 lbs
- Medium single adds 150 lbs
- Strong single adds 220 lbs

To achieve a staggered effect, place a doubled mini-band over the bar. To add tension starting at the knee, add light, medium, or strong bands over the bar. To add more tension below knee level, place the bands over a 25-lb plate on the bar. To increase tension close to the platform, place the bands over 45-lb plates. To achieve a triple staggered load, place mini-bands doubled over the bar, green or blue bands over 25-lb plates, and finally a light (purple) band over the 45s. It is recommended to do this extreme loading for only –2 weeks and then return to speed-strength work.

Remember, if you don't apply bands, chains, or weight releasers correctly, you won't get the desired results. Review Westside's reactive method video for the correct use. Most of what you will see is for the advanced lifter or athlete. Pay close attention to proper loading (i.e. the number of lifts at certain percentages). This is essential.

The Squat

Your squat is going nowhere. No matter what you do, it won't increase. What can you do? First, let's talk about form, Box squatting is a must. Use a box that is slightly below parallel. Sit fully on the box, keeping all muscles tight, most importantly the abs and the obliques. By releasing only the hip muscles, you are going from a relaxed state to a dynamic phase. This is one of the best methods of developing absolute strength as well as explosive strength. Lowering the bar produces a great amount of kinetic energy, which is stored in the body resulting in reversal strength.

For box squatting, the form is the same as regular squatting. Before descending, the glutes must be pushed out to the rear. Because you are going to squat to the rear and not down, this sets up the body for a stretch reflex. Next, push the knees out to the sides. This accomplishes two things. It places much of the stress, or work, on the hips, and it will greatly increase your leverage in the bottom of the squat. By pushing the knees out, you are at least attempting to keep the knee joint in line with the hip joint. In theory, if you can stand up with 1000 lbs while your shoulder, hip, knee, and ankle joints are in line, you could squat to parallel with the same weight if the above joints are kept in line. That is why it is so important to super arch the back by keeping the chest up while in the bottom of a squat.

If you correctly push the glutes out first on the descent, the head will move last. On the ascending phase, the reverse is true. The head must come up first by pushing the head into the



traps. It is then natural for the hips and glutes to follow. Also, never push down with the feet when squatting. You must push out to the sides on the eccentric and concentric phases. That's why we recommend Chuck Taylor shoes. The feet can be pushed out to the sides without the feet rolling over. When sitting on the box, it is possible, and desirable, for the shins to be past perpendicular. This places all the work on the vital squat muscles. This is impossible with regular squatting.

Train on a box with 50–60% of your best contest squat. A 500-lb squatter would start at 250 and jump 10 lbs a week for six weeks. Now, the weight is 300 lbs. On week seven, drop back to 250 (50%) and a new wave. This is done for ten sets of two reps for four weeks. Then drop to eight sets. This will keep the bar volume relatively the same. The volume will change dramatically when you start the wave again, adding 3–4 special exercises that have not been used for a period of time.

The combination of changing special exercises and using short rest periods (about 40 seconds between sets) has proven to be most effective for producing growth hormone. The short rest will cause lactic acid to build up.

When you fight through this discomfort, you will produce the most growth hormone. Also, when you use maximal weights in the same exercise for more than three weeks, growth hormone production stops! Wusef Omar, a colleague of the renowned Tudor Bompa, with the help of top exercise physiologists validated this at York University in Toronto.

On the dynamic day after box squatting, select 2–4 special exercises to improve. Because all the muscles that squat are located in the back of the body with the exception of the abs, select exercises for the spinal erectors, glutes, and hamstrings such as back raises, reverse hyperextensions, pull-throughs, sled dragging, and calf/ham glute raises.

The abs are very important for squatting, and we look at abdominal training very seriously. Because when you squat or deadlift you are standing up, we do the majority of our abdominal work standing up. This is done on the lat machine. Face away from the machine and pull a triceps rope down to the base of your neck. Hold the ends of the rope against your chest. Now, bend over by forcing the abs to flex downward into the hips. This is exactly how the abs are designed to work. The obliques are the most important ab muscles. When you flex a weight off the floor or start out of a heavy squat, it is the lower obliques that initiate the entire upward motion.

What I have been discussing is correct exercise selection. I hope you noticed that I have not included leg extensions and leg press. Leg extensions are a waste. It's true that they isolate the quads, but the amount of weight is insignificant. Leg press machines are very dangerous

in general. They place a tremendous amount of strain on the lower back. A leg curl machine is designed for bodybuilding. While it does build the hamstrings between the knee and hip, bodybuilders use it because it does not build size at the knee or the glute tie in. It starts with knee extension and ends with hip extension but in a biomechanically unsound fashion. A glute ham machine works both the knee and hip extenders simultaneously. As in running and jumping, the quads do very little in squatting. So don't waste too much of your time on quads. For accommodating resistance, use chains or bands. Weight releasers are useful for building reversal strength.

I have discussed the speed day, Friday, for squats. For the development of absolute strength, we have a max effort day three days later. On this day, we never do regular squats. About seven weeks out of ten, we do some kind of good mornings for a 3RM. We use special bars including the safety squat bar, Buffalo bar, bent bars, and a special cambered bar that has a 14-inch camber, which takes the upper back out and makes the mid to lower back work overtime. Two out of ten workouts are some type of squatting on a variety of boxes from 8–17-inches high and with a variety of bars or with the MantaRay or front squat harness. Do a 1–3 rep max in these special squats. Switch the core exercises every two weeks again to maintain production of growth hormone. One out of ten workouts should be some kind of pull for a 1RM.

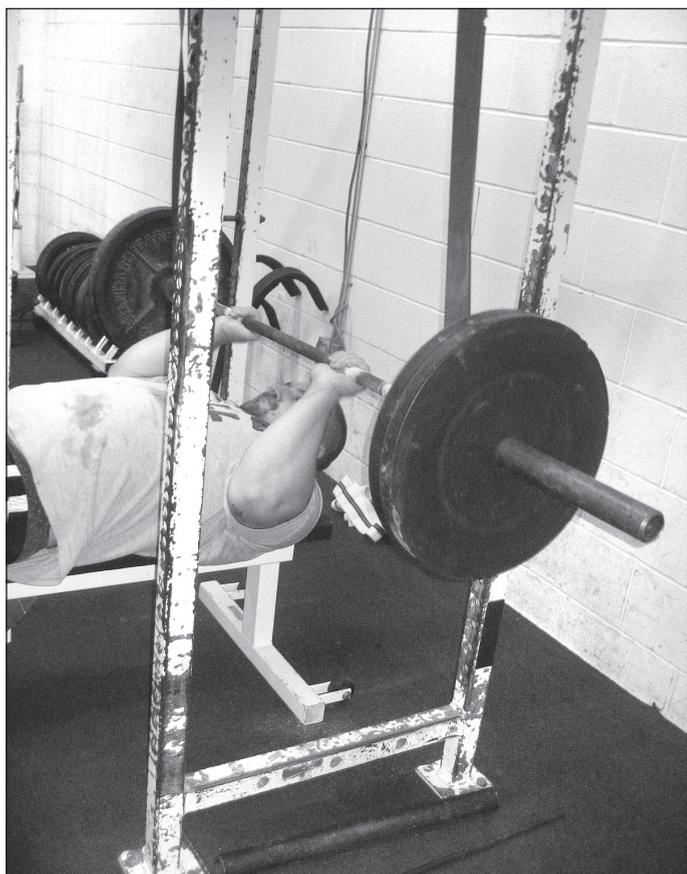
After the core lift, use 2–4 special exercises (glute ham raise, reverse hyperextensions, or pull-throughs). Raise special work for 3–4 weeks. This is the correct method to raise volume with special work, not the classical exercises. Note: Close to a meet, work on speed and raise special exercises for the abs, low back, hamstrings, glutes, and hips.

The Bench Press

Everyone likes to bench press, but no one likes to get stuck. Not making progress is no fun and sometimes grounds for retirement. Only the strong at heart will continue. But should anyone ever stall out? The answer is no. The problem is if you do the same training, you will get the same results.

To address the technical aspects of benching, we must determine what is proper bench press form. It has always been thought that you should push the bar back over the face. However, it makes little sense to do so. When a bar moves toward the face, many bad things occur. The delts are placed under great stress, especially the rotators, and no one wants that. Also, the lats are no longer involved in the lift when the bar moves toward the face. The bar should be lowered with the lats, not the arms. Without strong lat involvement, there is little chance that the bar will be placed on the chest correctly. It may land too high or too low. If it is too low, the delts are involved too much. If the bar lands too high, the triceps are involved too much. Strong lats will ensure the bar is placed in the correct position, that is, with the forearms vertical. In this position, an equal amount of delt, pec, and triceps are used in pressing. If you don't place the bar in the correct position, delt and pec injuries are more likely to occur.

The path of the bar in the concentric phase (raising) should be a straight line. This requires the correct use of the muscles. When the Clemson University coaching staff wanted to know which are the most important muscle groups for benching, George Halbert told them triceps are first, lats second, upper back third, and delts last. George holds the world record in the 220s at 657, a world



record of 688 in the 242s, and a 683 at 227, the heaviest triple bodyweight bench of all time (457 lbs over body weight!).

The delts are almost always overworked, and the triceps are underworked. You see a lot of delt and pec injuries but not a lot of triceps injuries. This tells me that most lifters don't train their triceps to the max. When the triceps, upper back, and lats are the strongest muscle groups, the bar will travel in a straight line, making the distance to lockout much shorter. Also, it does not require the arms to rotate outward, which causes injuries to the pecs and rotators.

Exercise selection is crucial. On dynamic day, after doing your 8–10 sets of three reps at 60% of a shirtless max, train the triceps first. It is quite common for our guys to do 14–18 sets of triceps extensions. They are done mostly with a straight bar. One frequently used exercise is JM presses for 3–5 reps working up to as heavy as possible. Always try for a new PR. The same applies to straight bar extensions to the chin, forehead, or throat. Heavy dumbbell extensions are also used for 6–10 reps for 6–10 sets. Use short rests between sets, usually 30 seconds or less. For the bar work, 90 seconds is advised.

For advanced lifters, such as Phil Guarino, superset light push-downs or light dumbbells in between bar extensions or JM presses. This will greatly increase your GPP and thus your bench press. Phil used this method for one year and pushed up his bench from 525 to 633 at 242 and recently made a 661 at 253 body weight. Also, for the triceps, try using flex bands while benching off five 2 x 6s. This takes the delts and chest almost completely out of the movement, leaving only the triceps to do the work.

Lats are next. Rows of all kinds are done as well as lat pull-downs with a wide variety of bars. We don't do many chins, but they are a good way to work the lats also. We do



a lot of upper body sled work. This is my personal favorite. We also do a lot of static lat work with the flex bands by hooking one band around one of the uprights of the power rack and holding the ends of the band so that the lats are contracted for a long period of time (about 2–4 minutes). When you become fatigued at one position, change the position by slightly bending or straightening the arms and continue to hold the tension. Remember, when bench pressing, the lats are held statically. The delts rotate and the arms bend, but the lats stay contracted.

The sled and bands work perfectly for the upper back as well. Inverted flyes, dumbbell power cleans, and lat pulls to the face can also be done. Choke a set of flex bands to the top of the power rack, one on each side. Place a bar in the loops. Lie down as if to bench and pull the bar to the chest or belly using various grips. This simulates the action of the lats while benching. Tuck the elbows in tight.

It is also important to have strong forearms. I have never seen a strong bencher who doesn't have large, powerful forearms. The tighter your grip, the easier it is to activate the triceps. To use the biceps fully when benching, imagine you are stretching the bar apart. The first muscle to flex while pushing a bar concentrically will be the biceps. This technique of pushing the bar apart is very important and requires that one do external rotator work. This can be done with rubber bands. Older lifters may remember the chest expanders that Bob Hoffman sold. When these were popular, there seemed to be many fewer shoulder injuries. Could it be that all of that external rotating prevented rotator injuries, which we see so many of today?

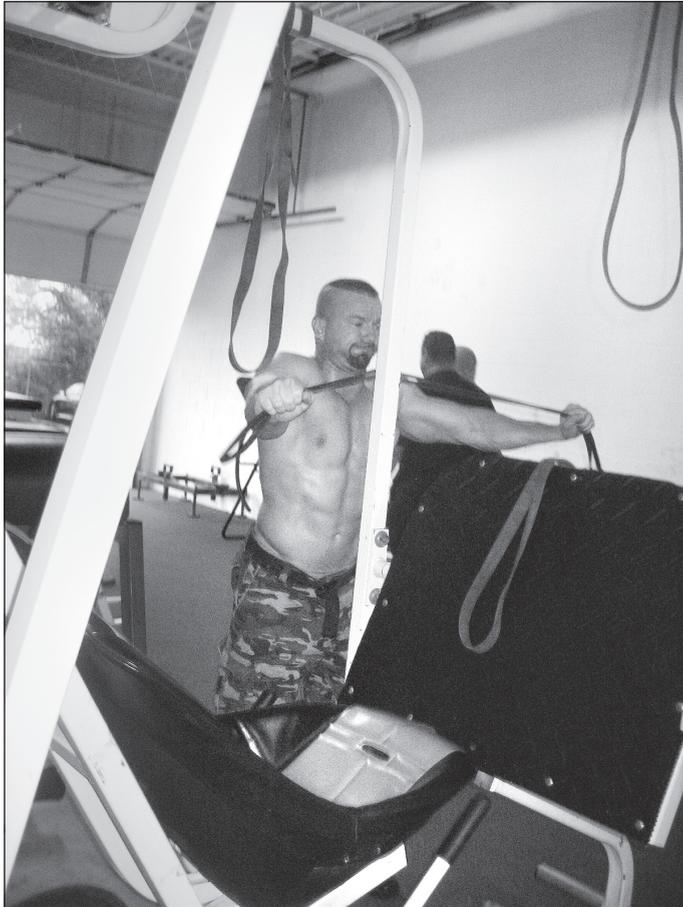
Let's look back. If your bench press is not progressing, it could be poor form, which could be a result of a lagging muscle group or not knowing how to bench correctly. Don't merely take someone else's advice on how to bench, but think for a minute and review what was discussed here. On speed day, speed is what we are after—starting and accelerating as well as reversal strength. Train with 45–50 % of a no-shirt max. This will utilize power production maximally. Do 8–10 sets of three reps.

On the maximum effort day, you must max out on one core exercise and don't be afraid to miss. Do a final warm up with 90% and then try a PR. This workout should occur three days after speed day. On both days, push up your special exercises such as triceps extensions, delt raises, lat work, and forearm work. After the core lift, pick 3–4 exercises and never work out longer than 60 minutes. Do your triceps first and forearms last. If possible, do a second workout later in the day. This workout should be 20–30 minutes long and should consist of extensions, raises, lat work, and curls. No bar pressing should be done.

Does this work? Check out the records and clubs of our lifters. Bill Gillespie, strength coach for the Washington Huskies, has gone from 480 to 782 in about seven years and has passed every drug test he was given. This should be proof that this system works for anyone, not just those at Westside.

The Deadlift

Squat and bench press records are continually being set in recent years. It's easy to see why. Most federations have a 24-hour weigh-in rule, which is a positive thing for the health of the lifter. It is easy to rehydrate in 24 hours, which results in fewer cramps and muscle pulls and tears. In the old days, it was common for lifters to pass out while squatting or to drop the squat bar because



they were dizzy. And, of course, the more you weigh, the more you can squat or bench. In addition, the introduction of power suits, groove briefs, and bench shirts has enabled the lifter to make bigger and bigger lifts.

But what about the deadlift? Does equipment help in this lift? Shawn Coleman said that using a larger deadlift suit helped him get into a better starting position to pull a PR 835 deadlift. So while supportive gear can help the squat and bench and prolong one's lifting career, more times than not it can be a hindrance for deadlifting. So, if equipment is of little benefit, what's the answer when it comes to the deadlift? Training.

Most lifters deadlift too often and too heavy. This has an ill effect on the central nervous system. A better method is to use a variety of exercises that mimic the deadlift or special exercises that develop the individual muscles that are used while deadlifting (the conjugate method). One must build the muscles that start and finish the lift. Also,

there must be methods used to develop speed and acceleration. The quicker the bar is locked out, the less chance for the grip to give out.

Vince Anello, an 821 deadlifter at 198, once told me that anything he did would make his deadlift go up. Bill Starr said that if you want to deadlift more, don't deadlift. Bill was an excellent Olympic lifter who pulled a 666 national record in 1970, having concentrated on powerlifting for only a short time. Whether they knew it or not, both men were utilizing the conjugate method. This method was devised to develop the muscles and special strengths (starting, accelerating, and absolute).

The good morning is a valuable exercise in the conjugate method. For deadlifting, the bent over version is the best. Bend at the upper back first and round over while lowering the bar. The legs can be slightly bent to prevent hyperextension of the knee. While doing good mornings, always think about duplicating the motion of a deadlift. Only you, the person doing the good morning, can gauge its effectiveness by the stress on the spinal erectors, hamstrings or glutes, and hips, and of course by whether or not your deadlift goes up.

Shawn Coleman did 600 for five reps in the good morning prior to his 835 deadlift. If you are doing 600 for five reps and your deadlift is 700 lbs, you are just kidding yourself, and you must change your training. Use a variety of bars in the good morning: straight, cambered, and the safety power squat bar. Use a high bar placement and a low bar placement, a close stance and a wide stance, and sometimes do them seated. Bands and chains as well as weight releasers can be used. One to six reps works best. Stockier men should do at least three reps to increase muscle



tension. Because a max deadlift can take several seconds to complete, the duration of a set of reps in this lift must also be several seconds.

Various types of squatting should also be done to increase the deadlift. Michael Brugger of Germany related to me that the Olympic style squat was his favorite exercise to increase his deadlift of 887. Eddie Coppin of Belgium made an 826 deadlift at a body weight of 186. The front squat was a major part of his training. In the early 1970s, George Clark pulled 700 at 181 and just missed 735, the world record held by Vince Anello. George's main exercise was the hack squat deadlift with the bar held behind his back. These are three examples of great lifters using a form of the squat to raise their deadlift.

Squatting with a bar held in various ways will place the stress on the erectors, hips, and glutes—the primary muscles that deadlift.

We advise using a group of specialty bars including the Buffalo bar, safety power squat bar, and MantaRay. This will teach you to maintain a more upright position, which is conducive to a good deadlift.

If you do all deadlifting, it is a matter of time before your deadlift will stall, or even worse, injury will stop all progress. Why? No one's body will equally distribute the work evenly between the lower, mid, and upper back. If the lower back takes the major role in deadlifting, which is most often the case, eventually an injury will occur. But by doing a variety of special exercises for the upper back, the muscles of the entire back are more likely to receive equal work. These exercises include shrugs, lat work, spinal erector work, good mornings, back raises, reverse hyperextensions, glute ham raises, sled work, and pull-throughs.

What about starting and accelerating strength? The best way to develop these strengths is by using flex bands. By attaching the bands over the bar, the resistance is applied to the bar evenly. The higher the bar is raised, the more resistance applied to the bar. If you are weak at the top, with the bands you will learn to pull faster at the start so momentum and then acceleration can help carry the bar to lockout. If you are weak at the start, the bands will teach you to start off the floor faster because without the fast start, you will not be able to lockout a heavy deadlift. For those who have said this will not build acceleration, they don't use maximum weight with the bands but rather 60%. More resistance is added to the bar by the bands as you lift the bar. This is called accommodating resistance.

Concerning contradictory information on this subject, research in the United States is invariably done in a college environment. It is conducted with students as subjects. These students many times are not avid weight lifters, nor are they of high standard such as Elite lifters. Nevertheless, conclusions from these studies are put forth as a model for all training, including

that used at football and weight lifting facilities.

The most usable results are obtained by testing high skilled athletes. This is what is done at Westside, where only Elite lifters are tested. You must have a qualified trainer to ask the right questions and highly qualified lifters to test to help answer those questions. Poor testing also occurs when two different training methods are tested together. This example also points out the misuse of plyometrics. A lifter had tried a program of plyometrics in between deadlift sets. Not only will the plyometrics dampen the central nervous system for the following sets of deadlifts, but in fact, the deadlifts would also negatively affect the plyometrics. He raised his pull 2.5 kg, an insignificant amount to register a valid training effect. You can't train plyometrics and the maximal effort method at the same time.

Plyometrics help the separation phase only, when the bar separates from the floor. But this particular lifter had difficulty above the knee level and locking out. He was also doing rack work above the knee at the same time and sled pulling. These two exercises build the top part of the deadlift where he would fail. The plyometrics build the start, not where he needed help. In the United States, plyometrics are misused more times than not. They are so draining on the central nervous system that heavy pulls and squats must be decreased or done during the non-competing months of the year. In summary, please be careful what you read. Not all conclusions are valid. The abdominal muscles are extremely important in deadlifting. The abs must flex first before the lower back starts to do its work. Lifters with weak abs and a strong back will invariably hurt their back. When the back flexes first without the abs working as stabilizers, the back is put under great stress. Therefore, you must learn to increase intra-abdominal pressure while lifting. This will reduce the risk of a hernia and greatly reduce pressure on the disks.

The internal and external obliques play a great role in stabilizing the hips, and they initiate straightening the legs in the deadlift. Years ago, when powerlifters could deadlift more than they squatted, the obliques were often much more developed than they are today. Lifters did side presses and one-armed deadlifts to develop the obliques.

At Westside, we do most of our ab work standing up with a lat machine. The abs must flex downward to be effective. Oblique work can also be done standing up. Face away from the lat machine with the strap held behind your neck. Put one foot in front of the other and bend forward flexing the obliques. This will train the abs correctly.

You must do all types of ab work. In addition to standing ab work, leg raises and straight leg sit-ups are beneficial. Don't be confused by the way bodybuilders look. Every time I watch one of those fitness shows, some big time bodybuilder is telling everyone to keep his or her knees bent to take pressure off the low back. I guess sucking in those abs is a bunch of crap, huh. Because if their abs were half as strong as they look, they wouldn't be worrying about their lower back.

Although a smaller waist will make it easier to deadlift, it must be very strong. One could see John Kuc's abs through his super suit from 100 feet away when he made 870 at 242. Bob Peoples taught the best method of using the abs in the deadlift to me. He said it was best to breath into the stomach only, not the chest. This will stabilize and support the lower back, and it does not elongate the spine. The shorter the spine, the better the deadlifter. If you have long legs, a short torso, and long arms, you have the perfect build for deadlifting. More important than the right build is attitude. The deadlift is a tough lift, especially at the conclusion of a long meet.

PREPARING FOR A CONTEST

Your training for an upcoming contest must be thought out precisely. You must add muscle mass, speed, strength, and coordination. The simplest method of progression (10s, 8s, 6s—progressive gradual overload) works in the beginning, but what doesn't? As you become more advanced, you will need a more sophisticated method. If you choose to go from 10s, 8s, and 6s down to 2s and singles, many bad things happen. One is that the volume and intensity are impossible to control. There is an optimal number of lifts at certain percentages. For example, weights at or above 90% of a 1RM are to be done for 2–4 lifts, but many do 3–5 lifts on a regular basis. An Olympic lifter can do 4–10 lifts per workout with 90% while a powerlifter should do 2–4 singles per workout with 90% and above. With the old progressive overload method, 10 reps with 70% is common. What a waste. Through extensive tests of high-skilled lifters, 4–6 reps with 70% was shown to be optimal. For all athletes, the better you are with reps, the worse you are with a single.

Think about this. Throw a basketball as high as possible. The ball reaches its highest point before it lands and bounces. The first bounce is the highest bounce. Each successive bounce is



lower as the ball's energy dissipates. Similarly, when doing reps, you have a limited amount of energy. With each rep, you will be a little less effective in your force production. But, unlike the ball, you have a brain and spinal cord. You may learn to conserve your energy to perform more reps. This is a mistake. You will become slower and be unable to push effectively with the heaviest weights. Remember, we are striving for speed, explosiveness, and absolute strength.

Competition picture

Like everyone else, I watch TV. One of my favorite shows is Kiana's Flex Appeal on ESPN. Well, you've probably guessed the main reason I watch, but I also watch the high rep bodybuilding boys do their best imitation of plyometric training. They are slower than my grandmother. Why? This is the result of slow, high rep training (similar to HIT).

Now, let me get back to the old progressive method. It is based on a hypothetical max. No one can project a hypothetical max. This throws off the entire training cycle. You think you are at 80% when you are really at 90% of your true max. Again, remember what training at 90% does to your CNS. After three weeks, you will cease to make progress. Another reason for the failure of the progressive overload method is that close to the meet, most lifters will drop their assistance exercises. Why do them at all if you are going to do this? The effectiveness of these exercises is almost completely lost in two weeks. Also, because of the stress of doing max singles in all three competition lifts, you are mentally and emotionally worn out before the meet. It's stupid to spar with Mike Tyson if you are going to fight Cecily Tyson.

With the progressive overload system, every type of training is used in one workout. However, your body doesn't know what you want it to do with so many different demands placed on it. For example, one must train speed and endurance separately.

Overall Program Guidelines

So, what's right? Personally, I look at weight training for what it is—mathematics, biomechanics, and physics. This is what we do at Westside (and the results speak for themselves). The work must be divided into special days: a dynamic method day for the bench and one dynamic day for the squat and deadlift, a maximal effort day for benching that occurs three days after the dynamic day, and a maximal effort day for the squat and deadlift. The week should look like this: dynamic squat on Friday, dynamic bench on Sunday, max effort squat/deadlift on Monday, and max effort bench on Wednesday. This sequence works best for weekend meets.

Let's start with the squat. We always box squat just below parallel. Without bands or chains, the bar weight is 50–60% of a 1RM. During the cycle, do 12 sets of two reps with 50, 52.5, and 55% and ten sets of two reps with 57.5 and 60% using only one percentage per week. When you reach 60%, start over with 50% the next week. This is a pendulum wave much like that used by Alexiev. It is easy to improve form and build speed and starting strength by training with weights at these percentages.

When using bands or chains, 6–8 sets of two reps are used including during the circa-maximal phase. It is easy to monitor volume and intensity with this system. After box squats on Friday, special work for glutes and hamstrings, abs, hips, and spinal erectors are done. Every other week, we do six speed deadlifts with 60–70% with short rest periods of 45 seconds.

Now, let's stay with the squat and go on to max effort day, Monday, 72 hours later. You must max out on a squat, good morning, or pull. We recommend singles in the squat and deadlift and triples in the good morning. You will need spotters because you are maxing out. Don't be afraid to miss. Rotate from a squat one week to a good morning the next. Most of these workouts are some variety of a good morning. The squat can be done in several ways: front squat, safety squat bar, MantaRay, cambered bar, and belt squat. With five different box heights, this adds up to 25 varieties of squats. Adding bands or chains or both, you now have over 40 exercises. Switch each week to a different core exercise if you are advanced or every two weeks if you are not. After the core barbell lift, do 2–4 exercises for glutes, hams, low back, lats, and abs. Rotate as often as necessary to maintain progress.

The bench press has two days as well. On Sunday, we use the dynamic method. We have found that using one weight works best for the bench. No wave is used. Instead, 60% of a no shirt max or 50% of a max with a bench shirt is used every week for 8–10 sets of three reps. The grips are moderately close to close. It is easy to maintain the intensity and volume. If you bench 400 without a shirt, you would train with 240. One set of three reps equals 720 lbs. Ten sets of three reps at 240 equals 7200 lbs. Our experience with 25 men who bench 550 or more and the data from scientific research have shown that using these percentages will develop force production the best. On dynamic day, you improve form and build starting and accelerating strength.

To build strength, the volume must be increased. A 400-lb bencher using 240 for his sets does a total volume of 7200 lbs. A 500-lb bencher would require a total volume of 9000 lbs and a 600-lb bencher, 10,800 lb. Remember, this day is not intended to develop absolute strength but rather to develop force. (The max effort day is used to increase absolute strength; see below.) The weight on dynamic day is increased only when a new contest max has been achieved. After benching, concentrate on triceps work. They are the key to a strong bench press. Do lats next and then upper back. Some forearm work and a little biceps work won't hurt either.

Wednesday is max effort day for the bench. On this day, three lifts at or over 90% and a max of seven lifts are to be performed. We recommend that a new PR, or even two, be attempted in one workout. The higher skilled you are, the more often you must rotate a core lift. For example, in week one, do the board press. For week two, do the floor press, week three the chain press, week four 150 lbs of band plus weight for a max single or triple, and week five incline press. Use any sequence you like working up to a meet. Max out only on max effort day in a core exercise. We frequently hear about lifters who hit huge numbers in the gym yet seldom repeat them in a meet. Either these lifters lack self-confidence or they don't have a clue how to peak for a meet. I can bet you that if you break records in your core lifts, have raised your level on extensions, lats, and delt work, and have developed greater speed on dynamic day, your bench press will be up.

To increase your lifts, you must be stronger and faster and have very good form. This program has few detraining phases because every type of training is performed over the course of a week: max effort work, speed work, GPP work, technical work, and restoration modified for each lifter's individual needs.

With progressive gradual overload training, which is used more often than any other method of training, in the beginning the intensity is low and the volume is high. Later in the cycle, the structure is reversed close to a contest. The injury rate is higher with this type of loading. The volume is impossible to control because several intensity zones are used in one workout. This

is very ineffective. As the weight gets heavy close to the contest, the special work for individual muscles is neglected. This is when the injuries occur because of a lack of GPP.

Let's forget progressive gradual overload. It's a dead-end street. I found out 17 years ago. By the way, this system was invented and abandoned in the old Soviet Union over 40 years ago. One should learn about other periodization models such as those of Verkhoshansky, Vorobyev, and Medvedev. I personally thank these men as well as Dr. Siff and Dr. Zatsiorski for making it possible for me to lift more at age 52 than I ever dreamed possible.

Designing Your Training Outline

When is the most stressful two weeks of your life? Two weeks before graduation and you're flunking out? Two weeks before your wedding and you know your whole life will be ruined forever? Or how about the last two weeks before a power meet? This is the most important time in training. It is "make or break" for many of us. How much or how little should you do? When is the last workout? What about taking openers? Should you use meet equipment?

Let's start with the squat. As you know, we use a wave mini-cycle for the squat. We also train with a box at or below parallel. I will use Rob Fusner as an example. His best squat was 875 at 275 at the time.

- Week 1 425 x 8 sets of 2 reps
- Week 2 455 x 8 sets of 2 reps
- Week 3 475 x 8 sets of 2 reps
- Week 4 495 x 6 sets of 2 reps
- Week 5 425 x 8 sets of 2 reps
- Week 6 455 x 8 sets of 2 reps
- Week 7 475 x 8 sets of 2 reps
- Week 8 425 x 8 sets of 2 reps

In addition to the normal bar weight, we use chains (about 120 lbs) or bands (about 150 lbs of tension). These sets are done on Friday, the dynamic method day, combined with the contrast method through the use of bands or chains.

The objective is to move the weights in:

- Week 5 faster than in week 1
- Week 7 faster than in week 3

This will show the development of force. That is the purpose of the dynamic method, to build acceleration and reversal strength. Short rests between sets are important for increasing intensity. Forty-five seconds is recommended.

We have found that the 40–60% weights work best for the squat. It is very important to push up the special exercises such as the reverse hyper, abs, sled work, and belt squats. Use only 3–4

exercises after squatting and don't forget to rotate when necessary. Remember that the goal is to become faster with the same weight on each new wave.

This can be accomplished by the use of flex bands or chains or by increasing the special exercises that build strength in the glutes, hips, hamstrings, and abs. This will also build form by increasing the strength in the vital squat muscles. Do not do regular squats after a box squat workout. The squats will completely wear the vital squat muscles and make a regular squat seem very hard and sluggish. We do a contest style squat only at the contest, never in the gym. Also, if you do a max box squat, don't do it the week before the meet. Two weeks out is ok but four weeks out is best. Don't get psyched up. Get motivated but don't burn adrenaline. We never use knee wraps or pull up the straps on the suit. Don't do an opener. Needing to do this is just a lack of confidence. Think about it. If you are worried about your opener, you are in trouble. Rather, think PR.

Here are two examples of a comparison of box squat maxes to a contest best. Amy Weisberger's best parallel box squat is 82%. Her best contest squat 445 at 123. Todd Brock had a parallel box squat of 710 (86%) and a contest squat of 820 at 270. This shows a 15–20% carryover to a contest squat from a squat PR. Most can use this reference.

We seldom do any regular deadlifting at Westside. Jerry Obradovic does rack pulls with the plates 2–4 inches off the floor. This is done only one time per month. The result is the highest deadlift/bench combine in the 275 class of all time: an 804 deadlift and a 644 bench. It is a rare combination to be such a good bench presser and deadlifter. It requires two different body structures.

We use the same day, Monday, to do max effort work for squatting and deadlifting. About six out of ten workouts are good mornings. They work most major muscle groups that we use in the squat and deadlift: the glutes, hamstrings, spinal erectors, and hips. About three of ten workouts are special squats using a variety of bars. Sometimes, especially during a heavy mini-period like circa max, we don't do any max effort work but rather train the muscles using the repetition method.

Each time you change bars, it will change the length between the sacrum and the center of the bar. This is possible by using a MantaRay. It raises the bar approximately 1–2 inches above the top of the delts. A safety squat bar, with its cambered design, also changes this length. On max effort day, you must push the muscles to their fullest extent. Try records in all types of good mornings, squats, and pulls. On both the dynamic effort and max effort days, you must push not only the major core exercises but also the special work such as reverse hyperextensions, pull-throughs, back raises, glute ham raises, and lat and abdominal work.

One does not have to squat or deadlift to become a good squatter or deadlifter. If it takes three seconds to do a max squat or deadlift and you place the right muscles into play with a good morning or special squat, you have accomplished the same thing. The more exercises you become accomplished in, the easier it is to master any exercise including squatting and deadlifting. Even football players play football only 20% of the training time. The other 80% is for special drills and to raise GPP. Pick the exercises that work best for you and use them closest to a meet. Rotate every two weeks and always max out. Do singles in squatting and pulling and triples in the good mornings. If you do pulls, don't do them for more than two weeks and never the last two weeks before a meet. If your form is good and your strength is up, then there is no reason not to break your squat or deadlift record assuming you're not a head case.

This is the conjugate method. Use special exercises to raise absolute strength and perfect form. This method will allow you to max out week after week, year after year. My friends, this is the only way to do so. If you choose to max out in one particular exercise for 3–4 weeks, you will stop making progress for neurological reasons. Check your training log if you don't believe me.

Delayed Transformation

The biggest obstacle for Elite lifters is displaying efforts from training at meet time. I frequently hear of lifters taking their openers before the meet. If the lifters at Westside were worried about their openers, we would not go to the meet.

What is the proper method of tapering your training for the meet? Much depends on the weight class you are lifting in. The heavy weight classes may need more time to reach full peaking. Leading up to any meet, the training should be divided into three-week waves. For squatting, the months before the meet should consist of light speed-strength work, 10–12 sets of two reps with less than 60-second rest intervals. This results in good form, raises work capacity, and above all, builds speed-strength qualities, which are important in order to exhibit maximum force production.

We focus on maximal speed with submaximal weights. With max speed, 154 lbs can produce 264 lbs of force. Most training sets average 40–50% of our top meet squat. But remember, we squat on a box. For one wave, we may use a blue band (200 lbs of tension at the top) or a green band (120 lbs of tension at the top) with three sets of 5/8-inch chain correctly hung from the bar (120 extra lbs at the top) or a purple band (80 lbs more at the top). It is essential to constantly change the rate of bar acceleration by different means. We may also use weight releasers with about 12% of our best squat weight, or the lightened method, where bands are hung from the top of the rack to support, or lighten, the bar load at the bottom of the lift.

After heavy training, such as the circa-max phase, one can't get any stronger. This is because of the accommodation effect of the near maximal efforts over a three-week phase. The logical thing to do is to reduce the training load. This improves the lifter's strength or performance by transferring the previous training weeks into performance growth. The circa-max squat phase is very strenuous. It consists of 6–10 lifts close to max to achieve strength-speed, leading to a gain in absolute strength. You must change the training volume, not the exercise. If not, no satisfactory result will be achieved. Two to four weeks are needed for the realization of better results at contest time. Only the top Elite powerlifter should use the circa-max method, which is using weights between 90–97% of a 1RM. It is very severe, and most at Westside use it for meets. We recommend that a four-week deloading occur (including the week of the meet) after the circa-max phase.

Here is an example using Paul Childress's final six-week training period before a meet. Leading up to the seventh week, Paul uses a high volume system of training, working on speed-strength exclusively with weights ranging from 40–55% for 8–12 sets of two reps. When Paul starts the circa-max phase, it looks like this:

- Week 1: 455 for 5 sets of 2 reps plus 500 lbs of band tension
- Week 2: 475 of 4 sets of 2 reps plus 500 lbs of band tension

- Week 3: 500 for 3 sets of 2 reps plus 500 lbs of band tension
- Week 4: 500 for 5 sets of 2 reps plus 250 lbs of band tension
- Week 5: 500 for 4 sets of 2 reps plus 125 lbs of band tension
- Week 6: 500 for 3 sets of 2 reps, no bands
- Week 7: meet result, 1052 at 308

At the 2005 Arnold Classic, Paul squatted 1085, a world record. If this extremely heavy workload would continue up to meet time, he would likely fail to make a big squat because he would have CNS fatigue as well as physical and emotional fatigue. This explains why a four-week cycle, or mesocycle, is needed to validate the previous training and express it at the meet. During this deloading phase, the number of workouts are reduced as well as the number of exercises per workout. The last four-week phase calls for full restoration and calmness. Fewer bar exercises are performed and more specific exercises for building hamstring, glute, low back, and abdominal strength are done along with stretching.

By stopping the circa-max phase so far out from the meet, Paul is able to do a max effort day three days later on Monday. On this day, he will do triples in the 80% range. This pendulum training system works in direct line with the three-week pendulum wave that I have repeatedly written about. The fourth week is, of course, the meet.

The number of weeks of deloading necessary depends on your level of preparedness. Anu Turtianen uses a similar circa-max phase and then a two-week deloading phase. He recently squatted 1080 at 286. His bar weight varies from 540 (50%) to 628 (65%) plus a couple of singles at 705. The band tension is 220 at the top and 100 at the bottom. Chuck Vogelpohl was the lightest man to squat 1000 and 1025 at 220. His circa-max phase looked like this:

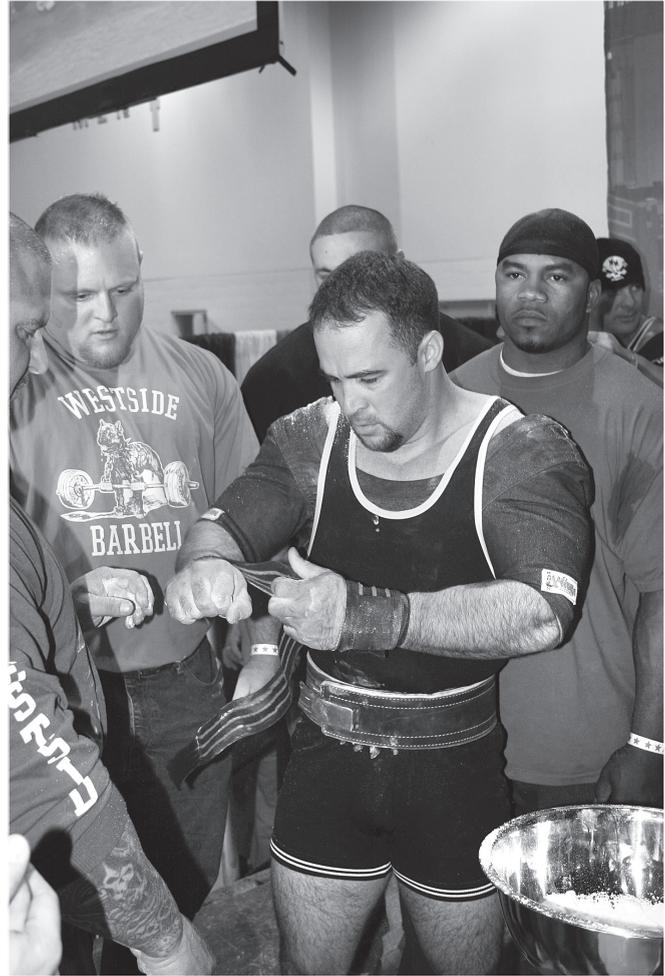
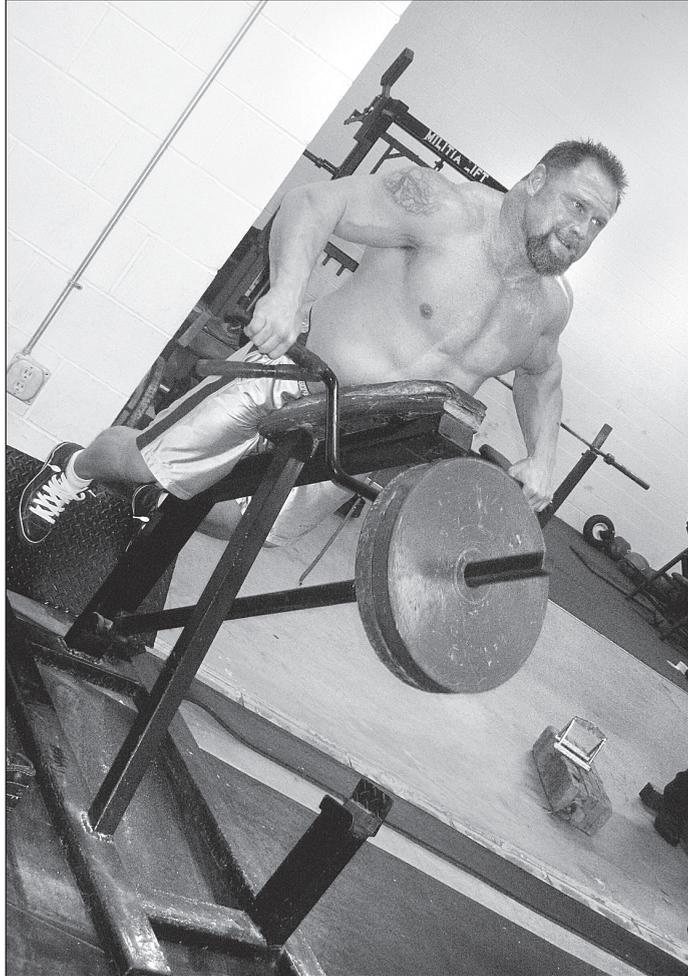
- Week 1: 455 for 5 sets of 2 reps with 375 lbs of band tension at top
- Week 2: 555 for 4 sets of 2 reps plus 375 lbs of band tension at top
- Week 3: 575 for 3 sets of 2 reps plus 375 lbs of band tension at top

Because of Chuck's high level of fitness, he uses two weeks to deload, lifting at the meet on the third week and realizing a total delayed transformation. One must learn to balance the very intense training while preparing for a meet with the efficiency to produce a high total at meet time. At Westside, this is done with a system of yearly, monthly, and weekly (macro-, meso-, and micro-cycles, respectively) cycles for the dynamic and maximal effort days.

Of course, delayed transformation occurs in bench pressing and deadlifting as well. There is no need to take an opener the week before the meet. In summary, delayed transformation occurs by reducing the number of exercises of all types to reduce the total training load due to the period of non-improvement that is caused by accumulated fatigue. This deloading for three weeks leads to an increase in strength. Its purpose is to prepare the lifter for a major competition. The higher the level a lifter achieves with a greater work capacity, the longer the delayed transformation is carried out. For those with a lower work capacity and usually a lower rank, the delayed transformation phase is shorter because they don't endure the same extreme rigors as the more advanced lifter. Lower skilled lifters don't use the same amount of muscle fiber as top lifters.

Our lifters at 275 and above always require a longer time to peak or realize the training loads

as a high meet result. Even when a contest is not close, the total volume must be waved up and down to achieve high results in a yearly plan. Change your exercises continuously to help recuperation. We at Westside never do the same exercise on max effort day two weeks in a row. This is to avoid accommodation. The more exercises you do in a yearly plan, the more fully prepared you will be.



GENERAL PHYSICAL PREPARATION

I write to all powerlifters, but I am always amazed to hear a drug-free lifter say that he can't train the Westside way. Although these lifters are going nowhere fast, they choose to use the progressive gradual overload method, going heavier and heavier each week. In most cases, they stop making records and are stuck for years. Yet, they still choose not to use a more sophisticated method of training such as that used at Westside and presently used worldwide.

These drug-free lifters train so heavy that they can't do the special work that is required to excel at powerlifting. They do most of their training at over 90% of their max whereas we do most of our training at 60%. Doesn't this make more sense? A drug-free lifter trains only three, sometimes two times a week. No wonder they get sore. This style of training is similar to a weekend warrior playing basketball.

A great many major college and NFL football teams train in the same manner as Westside, and guess what? They are drug-free. During spring training, three a day practices are common. That is 15 workouts a week. So why do you think you should train only 2–3 times a week? We are on the same side folks so let's look at a systematic program that will start you making progress again.

What is GPP?

General physical preparedness (GPP) is a term that refers to a degree of fitness, which is an extension of absolute strength. Many don't believe in it at all. Here, I'm referring to those who say that if you want to be good at the power lifts, just practice the power lifts. Of course, this leads others to say that powerlifters are out of shape and the above-mentioned group is in shape. Many times the ones who advocate for only the classical lifts are the very ones who complain that powerlifters are out of shape. We all squat, yet we are not built identically. Some develop large quads, some develop big glutes and hips, and others may have very powerful hamstrings. It's obvious to me that if one muscle group is developed to a greater degree than another, then the smaller muscle groups are holding back your lifts.

What's the answer? You must do special exercises for the lagging muscle groups. But before you can pursue an increase in volume by way of special exercises, you must be in excellent shape. GPP raises your ability to do more work by special means. Rest periods should be 45–60 seconds between sets for explosive and speed work. The muscles should be in an excitable state or slightly fatigued. This will cause an increase in difficulty of training. If this is impossible for you, your GPP through small workouts is low. You can raise your GPP through small workouts between days and even prior to training.



Chuck Vogelpohl and I commonly go heavy on the reverse hyper machine and do abs, lats, and sometimes reversal action workouts before a squat or max effort workout. Small workouts during the week will greatly increase your chances of raising your total. Some of these workouts should be for special strength and some for restoration. This is a must for drug-free lifters. I've had many drug-free lifters here who have greatly pushed up their lifts by doing extra workouts. It's ok to be drug-free but don't be brain-free. If you don't do more, you will not make progress. A lot of you dudes played high school football, which included two and three a day practice sessions. You were drug-free then, so what's the difference? If these workouts are done systematically, you can't overtrain. Remember when your squat was 400? 500? 600? 700? But now you squat 800. How did you get stronger without doing more work but without

overtraining? You merely raised the amount of work systematically over the years. Simply stated, you raised your GPP.

Sled Work

There are several ways of raising work capacity. One method that we use at Westside is pulling the sled for the hips and glutes. We pull the sled with the strap attached to the back of our power belts. We walk with long, powerful strides, maintaining an upright body position, pulling through with the feet, which stress the hamstrings and glutes. This is common practice for throwers overseas.

I learned about pulling from Eskil Thomasson, who is Swedish. Before he moved to Columbus, Ohio, he visited Finland to see why so many Finns deadlift so well. Many of these strong deadlifters were lumberjacks. They routinely had to pull paper wood down to the main trail where the tractors could pick it up.

Another style of pulling is with a double handle held behind your back and below your knees. The torso is bent over, and the strides are long. This is great for building the hamstrings. To work the front of the hips and lower abs, attach a strap to each ankle and walk, pulling the sled by your feet. Vasily Alexiev used to walk in knee deep water for roughly 1000 steps after a workout. This is similar to what we are doing but with the advantage of being able to add or reduce weight, which varies the resistance.

For building the outside of the hips and the inside of the legs, position the straps around the ankles and walk sideways, first one way, then the other, left then right, forward and backward.

For the quads and front of the hips, walk backward with the strap around the front of your belt. To start this type of work, I recommend doing six trips of 200 feet each. Use only one style of dragging until you feel confident of your ability to include more work. We do this lower body work on squat day, Friday, and on max effort day, Monday, in addition to the days after (Saturday and Tuesday) using 60% of what was done on the previous day. This contributes greatly to restoration.

For the legs and upper back and for building your grip, try pushing and pulling a weighted wheelbarrow. This has had a great affect on my knee that suffered a patella tendon rupture. I thank Jesse Kellum for this exercise. He used this for knee rehab for professional football players. Pushing the wheelbarrow up a mild grade really increases the work on the lower thigh muscles. Again, start with six trips of 200 feet. Only when you have adjusted to the additional work should you increase the number of trips.

Now, let's go back to the sled, but this time for the upper body. When George Halbert sees an increase in upper body mass, the process must be working, and that process is pulling a sled with the upper body. There are many methods for doing this. One duplicates the motion of a pec machine. Start with the arms behind your back. Slowly pull your arms to the front. Walk forward slowly, let the tension in the strap pull your arms to the rear, and again pull forward.

You can also do a front raise motion with the palms facing down. For the lats, start with the arms behind your back and raise your arms, palms up like a double upper-cut by first flexing your lower lats. The farther forward the hands go, the more the upper lats are worked. By walking backward, you can do rear delt work, upright rowing, and external shoulder work.

A good reactive method for the bench press is to hold the straps out in front of you, and as you walk forward and the slack is removed, drive the sled forward in a shock fashion. This is very taxing but is great for reversal strength. Do the upper body sled work for time, not distance. Mix the different styles together. Start with five minutes of pulling and work up to at least 20 minutes. I do 30–40 minutes. Walk slowly and don't jerk the sled. Only the reactive bench press method should be jerked. Use the rule of 60%. Start heavy on day one and reduce the weight each day for three consecutive days. Then go back to a heavy weight the fourth day (e.g. 90 lbs, 70 lbs, and 50 lbs with each weight representing one day). The same applies to pulling the sled for lower body power and to the wheelbarrow. This work will greatly increase your physical ability to train and will double as restoration. This style of resistance work is for those seeking greater overall strength and power. This includes weight lifters, football players, or anyone who needs to raise work capacity to reach a higher level of excellence, which is anyone who took the time to read this book. However, are there different routes to this type of work? Yes.

As outlined above, there are several ways to drag the sled:

1. forward with strap attached to your belt
2. backward with the strap attached to your belt
3. forward with bent over style
4. forward going one side in front
5. forward doing triceps extensions
6. forward doing presses



7. forward doing internal rotations
8. forward doing front or side delt raises
9. backward doing rows
10. backward doing external rotations
11. backward doing rear delt raises
12. backward with the straps attached to ankles
13. forward with the straps attached to ankles

GPP work is very common in track and field overseas but is still very much overlooked in the United States. An experiment was conducted at the University of Pittsburgh. Head strength coach, Buddy Morris, brought in a sprint expert, John Davies, who is very well versed in GPP work for running. John works with many professional players and has consistently lowered their 40-yard times. While his GPP work consists of weightless drills such as jumping jacks, line hops, mountain climbers, and shuffle splits, it perfects running and jumping skills in addition to lateral speed.

As John simply puts it, “I have never met a North American athlete from the major team sports who the inclusion of this work will not cause a remarkable change in their optimum performance. Simply, without this solid base, substantial gains are limited and success is restricted to those more genetically gifted. The median improvement in 40-yard dash times over eight weeks was 0.25. This work is not for the weak of heart as the overall work volumes are enormous.”

Extra Workouts

I recall reading about a great Chinese fighter named Chen Fake (Fay-kee). When he was a child, he was very small and weak and lagged behind the other students. He asked the master how he would ever be able to catch the better students when they were progressing at the same rate. The master thought for a while and said, “While the others take their afternoon nap, you train. And at night while they sleep, you train.” After taking the master’s advice and doing extra workouts for some years, Chen Fake surpassed the top students and eventually became Grand Master of the Chen style, Tai It Juan. This is a true story, and what I am about to describe is also true.

Like Chen Fake, if you are to become better, you must do more work. But how? We know that a workout should last 45 minutes, 60 minutes at the most. Your energy and testosterone levels will fall off greatly after that. So commonsense tells us that longer workouts are not the answer. But we must spend more time in the gym. This can be done by adding more workouts. At Westside, we hold three of the 12 all-time bench press records. How? We do a dynamic method workout using 60% of a 1RM for force development. It is also intended to build starting and reversal strength, and with the help of bands, eliminate the deceleration phase of the bench press. After the bench press, triceps, lats, and delts are trained maximally for the development of absolute strength in each of the individual muscle groups. This is done on Sunday.

On Wednesday, we do max effort exercises with a barbell. Many core exercises are done but only one per workout (e.g. floor press, steep incline, chain press). Remember, just one per workout. This is followed by pushing the triceps, lats, and delts to the max. All workouts should last no more than an hour. As of October 1999, we have eight men with a 600 or more bench. The

biggest triple body weight bench (683 at 227) is a 657 world record at 220, a 701 world record at 238, and a 728 world record at 275. How do we do this? We do this by adding special workouts. These workouts should last 20–30 minutes. They are intended to raise work capacity, or GPP.

For example, George and Kenny do two special workouts per week. They are done on Monday and Friday. Each workout will begin with the triceps. They use several exercises such as barbell or dumbbell extensions, cable push-downs for high reps or heavy weight (always changing the bar attachments or the angle of the exercise), push-ups, or super high rep medicine ball throws. The same approach is used for the delts and lats. Upper back exercises are rotated in the same way. These workouts are done for restoration as well as for raising work capacity. Why is this so important? The more special workouts that George and Kenny do, the harder the two main workouts can be without them experiencing ill effects. If you want to do more, your workout must be continually harder. This means higher intensity and greater volume. One must also be able to recover from the workouts.

There are three main methods of restoration:

- Anabolic: This is, of course, out of the question for the truly drug-free lifter.
- Therapeutic: This includes massage, sauna, whirlpool, ice, electric stimulation, and so forth.
- Small workouts: these should last 20–30 minutes and should be done 24 hours after major workouts.

These workouts have the advantage that work can be done on a particular muscle group, one that needs attention for either strength building or restoration. Let's say at first glance a lifter appears to have very large arms, but on closer inspection, his delts and lats look underdeveloped. Although he may have a good bench, can you imagine if his delts and lats matched the development of his arms? His bench would certainly be much greater. That is what special workouts are for. If this lifter continues to neglect his lagging muscle groups, his bench will never increase. Also, he may be risking injury by not attending to his weaknesses. Even anabolics or massage can't cure a weak muscle group.

In the old Soviet system, 10–16 workouts per week were prescribed. In football, three a day workouts are quite common. That's 15 a week, but no one seems to think that's unreasonable. Here is an example of our major and extra workouts. The squat and deadlift use the same muscle groups so we use a speed day for squatting with 50–60% of a 1RM for multiple sets and perhaps 4–8 singles in the deadlift with 50–70% (using only one percentage per workout). Both the squat and deadlift must be emphasized for speed. After the percent training, we move to special exercises for the glutes, hams, torso, and hips. We pick exercises that work at least two muscle groups concurrently such as the glute ham raise, reverse hyper extensions, pull-throughs, and sled work. This will save time and is very productive. In addition, train the abs standing up.

On max effort day, we max out on good mornings, super low box squats with different bars, heavy sled pulling, bent over rows, and rack pulls. In addition to regular weights, add chains and bands and adjust the resistance. Do the special exercises after maxing out on the core exercises. On max effort day, use only one core lift followed by 2–4 special exercises. The extra workouts may consist of sled pulling.

Here are some typical workouts. Pull the sled for ten minutes and do glute ham raises for five minutes and abs for five minutes (20-minute workout). Do reverse hypers for ten minutes, lats for ten minutes, and abs for five minutes (25-minute workout). Do pull-throughs for ten minutes, abs for ten minutes, and dumbbell shrugs for five minutes (25-minute workout). Any combination will work.

Johnny Parker, the long time strength coach of the Patriots, told us a story about an old Soviet coach. Johnny asked him what to do on Monday after a game on Sunday. The coach said to work the player's legs. "What about Tuesday?" Johnny asked. The coach replied, "Work their legs." Johnny asked, "What about Wednesday?" The coach said, "Work their legs." Johnny said, "Wait a minute." The coach laughed and explained that you can work the legs everyday as long as you switch exercises. That is what we do. We constantly change exercises so the body won't adapt to the stimulus. One can mix and match 2–3 special exercises in a short, intense workout lasting no more than 30 minutes. The lower or upper body can be trained like this. Start with two additional workouts a week and slowly increase to 3–4. The more advanced you become, the more special work is required. Powerlifting is like any other sport. To become better, you must do more work.

Remember, use exercises that build the muscles. The muscles can be trained very hard and often. Large muscle groups can be trained every 72 hours and smaller muscle groups every 24 hours or less. If baseball pitching coaches understood this, perhaps they would use a three-day rotation, working half the staff every three days for a month and then the other half for a month while the resting half would go through a series of restorations. It is almost impossible to win 30 games with a five-day rotation. Yet, there used to be 30-game winners. It's all about GPP and special physical preparedness (SPP).

If I may go where I don't belong again, let's look at the home run race. Ken Griffey, Jr. started out like fire in the home run race doing quite well until the All-Star break. Then a meltdown occurred. His physique showed that he did little GPP work. As a result, he faded badly near the end of the season mostly from small injuries. On the other hand, it is obvious that Sosa and Mac do extra workouts outside of baseball. Doing so enables them to hit home runs right into October.

Let's review. Extra workouts work for great fighters and baseball players, and—of course—they will work for you. They may help you make that third attempt in the squat, bench, or deadlift. Remember, for benching only, add two workouts per week. They must consist of special exercises for the pressing muscles: triceps, delts, lats, upper back, and abs. Do only 2–3 per workout, which should last less than 30 minutes. Rotate the exercises as often as necessary. The extra workouts for the squat and deadlift should be no longer than 30 minutes paying special attention to the abs, entire back, hams, and glutes. Again, only do 2–3 exercises per workout. Always work the abs in each workout plus 1–2 other exercises. The main purpose is restoration and raising the weakest muscle groups up to or surpassing the stronger ones. We must learn to train scientifically. The man whose mind won't change will also have a total that won't change.

Designing Your Extra Workouts

First of all, you must be fast and very strong to excel at powerlifting. This requires a training program that is 50% for the development of absolute strength. The workouts must be separated by 72 hours! So, what can you do in between? You can do small workouts, 15–30 minutes per workout.

Let's look at bench pressing first.

Workout #1:

Lat pull-downs, dumbbell extensions, and side delt raises. Always do abdominal work.

Workout #2:

Barbell rows and four sets of dumbbell presses to failure. Use a weight where 15–20 reps can be done. Rotate from flat, incline, decline, and seated press. Also do abs.

Workout #3:

Three sets of seated dumbbell power cleans. Use a weight where 20 reps can be done but with much effort. Also do one-arm dumbbell rows, 2–4 sets, and two sets of push-ups to failure as well as abs.

Workout #4:

Two sets of benching for 25 reps. Use a different grip—wide, close, thumb or thumbless, or even reverse. Also do chin-ups, inverted flies, and abs.

Workout #5:

One of our 198s, Sonny Kerschner, had a 410 bench and was stuck. He began doing triceps push-downs with a pink flex band looped over a door at his house. Using strict form and a moderate tempo, he did 100 total reps three times a week. Six months later, his bench press was an official 470.

All of the above workouts must be brisk and almost nonstop. Not only will this build substantial muscle mass in the precise area you need it, but it will also raise your work capacity. As you can see, there are countless combinations to choose from. Remember to switch often and always think, “What do I need to raise my bench press?” Then do only that for 15–30 minutes tops. Start by adding one small workout a week and add a second and so forth when you feel capable. For the squat and deadlift, the same exercises will work for both. It is important to do ab work in every workout. Sometimes abs can be the only muscle group worked.

Workout #1:

Pull-throughs, leg raises, and dumbbell rows.

Workout #2:

Reverse hypers, stability ball, and abdominal work.

Workout #3:

Pulling a sled from a belt, rows, and standing abdominals.

Workout #4:

Pulling a sled from the ankles and lat pull-downs.

Workout #5:

Glute ham raises, weighted leg raises, and dumbbell power cleans.

Workout #6:

Walking lunges, side bends, and sit-ups.

Workout #7:

Flex band good mornings and chest supported rows.

Workout #8:

Box squat with a band looped through your belt and stand through both ends. Don't remove the band between sets. Then hook a band to the top of a rack and over your head to do standing abs.

Workout #9:

Choke a band around the base of a rack and do seated leg curls. Then do lying leg raises with chains draped over your ankles.

Workout #10: Good mornings with a band looped through your belt, standing in the loops, plus a second band over the neck and under the feet. Note: When using bands, contract the muscles forcefully and beware—band work is very taxing.

I have outlined many workouts here. Use 1–3 exercises per workout. Limit the workout time to 30 minutes including abdominal work. This time can also be used for flexibility work, which is important but often overlooked.

These special workouts are intended to raise the lagging muscle groups that we all possess. While working almost nonstop, you will also raise your GPP, something else that is often overlooked. For sports other than powerlifting, many drills can be used. Agility, flexibility, and dexterity can also be improved.

There are many lifters who deadlift or squat over 800 and also total 2000 drug-free so I know it is possible for you to make great progress if you approach training in a more scientific light. One must realize that large muscle groups recuperate in 72 hours and small ones in 24 hours or less. So it is quite possible to train many times a week.

Powerlifting, even with the advances in equipment, still is light years behind all other sports. Tracks have been made for sprinting and better poles and pits have been made for pole vaulting. New advances in football equipment including helmets, pads, and turf have evolved. But powerlifters train with the IQ of a caveman. The IPF refuses to use a monolift, and lifters are actually lifting in what is called raw or no equipment meets. What gives? We are going backward, not forward. Take advantage of technology and a scientific approach to training and you just might succeed.

Foundational Training for the Powerlifts

When I was a little boy, I remember building a club house. I worked very hard on the foundation and was ready to start the frame when my dog started barking and poking me with his nose to



get my attention. I realized he was trying to tell me I had built the foundation on my neighbor's property (he was a smart dog). Sure enough, my neighbor was looking out her window laughing at me. Needless to say, I hated that girl, but she and my dog were right. All that foundation work was wasted. Years later, after talking to hundreds of lifters, I have discovered that many of them build their foundation in the wrong place as well so here I am talking about lifting.

Bench Press

These lifters read too many bodybuilding magazines and build their foundation for a big bench by doing countless chest exercises and biceps work. Just like me, they built their foundation in the wrong area. By doing so much chest work, the body will automatically let the arms turn out prematurely in the bench press, thus placing all the stress on the pecs and taking the lats, which act as stabilizers, out of the bench press. This will cause soft tissue damage to the pec tie in. Sound familiar? I have heard so-called experts say that the lats don't aid in the bench press. It is apparent that these so-called, well-read experts are not expert at bench pressing. One only has to look at the great bench predecessors who all possess well-developed lats.

At Westside, we instruct all lifters to lower the bar with the lats. The lats work as stabilizers to keep the bar in line. Lowering the bar with the lats primarily and the arms secondarily allows for an explosive start by contracting the triceps in the concentric phase. If a lifter lowers the bar with the arms alone, the bar shakes and the elbows fly out to the sides, causing peck injuries. Perhaps worst of all, the shoulders are rotated severely, causing rotator injuries which are hard to get rid of. You may have been taught to press the bar

over your face. This is incorrect. The bar should be pressed in a straight line. Why? First, it is the shortest distance between two points. Second, there is no shoulder rotation, which is much safer for the rotators and the pecs. How is this technique possible? You must build the right foundation. This requires an enormous amount of work for the triceps first, then the delts, and finally the lats. I have said before that there are many shoulder and pec injuries, but how many triceps injuries (from benching) have you heard of?

There are very few because the triceps are never stressed as much as they could be. First, pick 3–5 triceps exercises: dumbbell extensions; straight bar extensions to the forehead, chin, and throat; and maybe JM presses. The bar extensions can be done with chains or flex bands. Basically, use one exercise until the triceps are exhausted. Then finish with some push-downs to hit the parts of the triceps missed by extensions. By rotating a different type of extension whenever it ceases to work, you can constantly make your triceps stronger year after year. After 3–6 weeks, you will have to switch to a different extension. Always try for bigger weights.

Delts are trained the same way. Front delt work with a bar, dumbbells, a cable, or a plate can be used. Again, push up the weight as well as the number of reps. You can do side delt raises with dumbbells standing or with a cable device and rear delt work while standing with a lat machine. Just pull a lat bar to the face or chest or to the top of the head. Dumbbell power cleans and inverted flyes work great. Remember to switch to a different delt exercise for a particular delt angle—front, side, or rear—and switch again when it stops working.

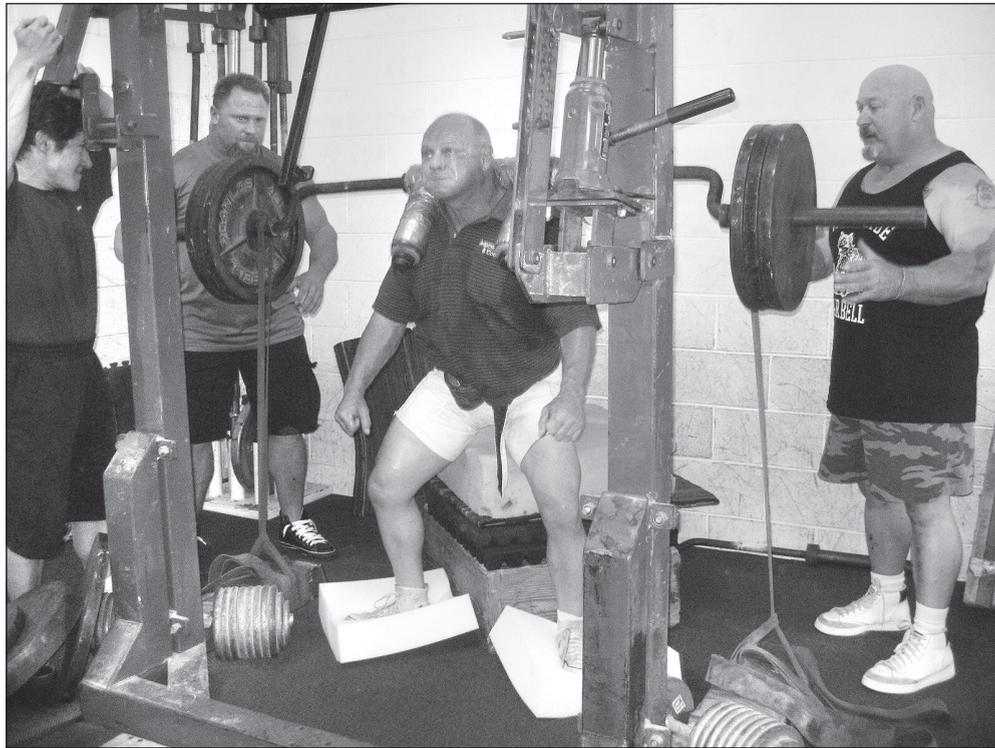
This is the correct base, or foundation work, that is needed for a huge bench. One final note—when your triceps become very strong, you should try to stretch the bar apart when pressing a weight. That’s what happens when a reverse grip is used. By doing this, the triceps are really put into action.

The Squat and Deadlift

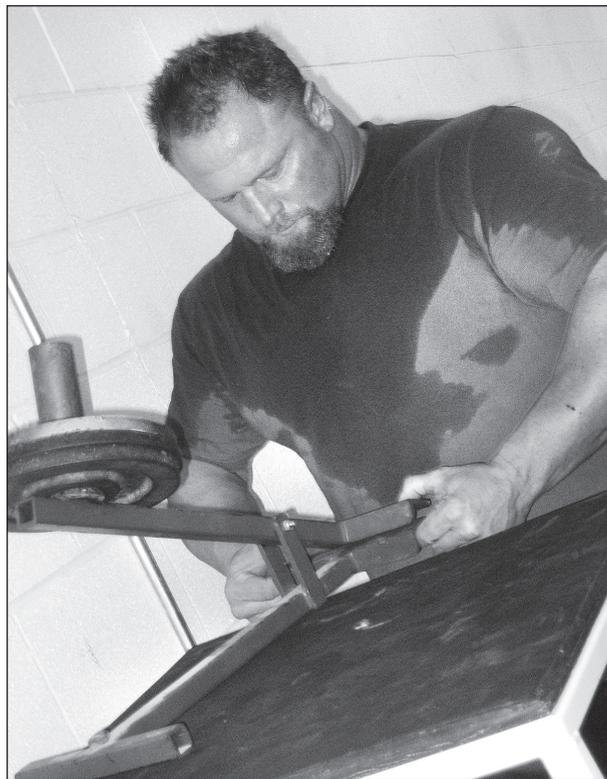
Almost every time a squat article is written, it concludes with assistance work for the legs such as leg presses, leg extensions, and leg curls. With the exception of non-machine leg curls, the foundation work is all wrong. When you miss a squat, it is because the lower back is giving out. This was brought to my attention by Bill Starr in an article in *MILO*.

If you overdevelop the quads, you are very likely to go forward when squatting. This can cause two problems: knee pain from overstretching the patella tendon and difficulty breaking parallel. If you go forward, hypothetically your knees would touch the floor and your hip joint would still be above parallel.

As far as leg curls are concerned, they are adequate but not nearly as effective as glute ham raises. A leg curl will activate the lower insertion that ties in behind the knee and then the knee and the attachment that ties into the glute. Because squatting is a multi-joint activity, the hamstring contracts and stretches while ascending and descending at both the hip and knee, respectively. That is why the glute ham raise was developed. It is beneficial for both squatting and pulling. Kenny Patterson recently pulled a 650 deadlift, a 65-lb PR. It took only about 12 weeks of concentrated work on the glute ham raise. The Soviets used it for sprinting, and Fred Hatfield said it contributed to his 1000-lb squat. Matt Dimel used glute ham raises as well for his 1010 squat.



So what is the correct foundational work for squatting? Hamstring work plays a large role, as stated above. We do as many different types of good mornings as possible. All work the hamstrings very hard with the exception of the seated variety. Of course, a good morning is a compound exercise that also works the spinal erectors and glutes to a greater degree than squatting.

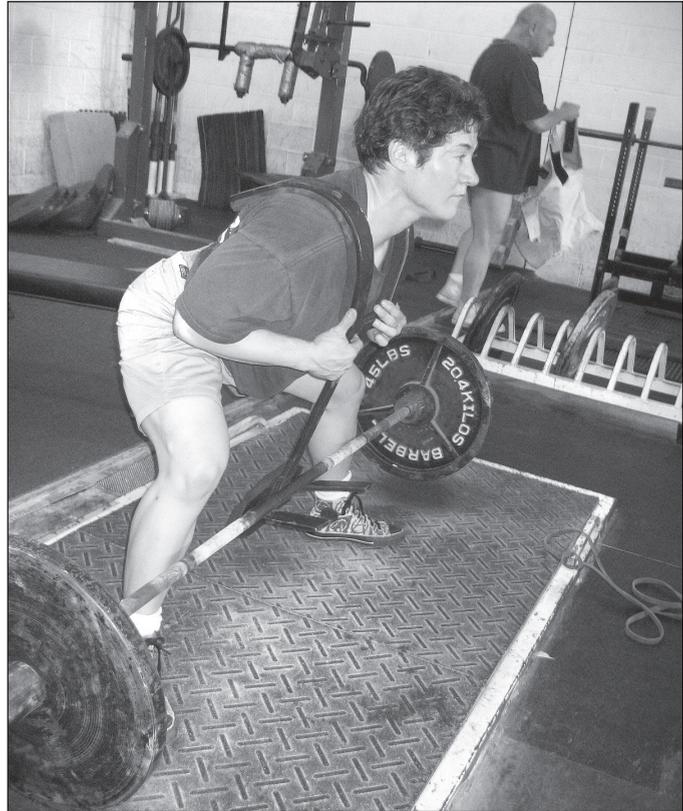


Here are three of our favorite exercises for the hamstring. The reverse hyper machine is tremendous for the hamstrings. It outperforms the Romanian deadlift almost 2:1 on an EMG machine. Glute ham raises are great. Someone at Westside is always doing them. You have to be fairly strong to do one. Pull throughs are effective when you use a low pulley machine with a single crossover handle. Face away from the machine, grasp the handle between the legs, and walk out a few feet. Let the machine pull the handle between your legs and squat up and down. It will blow up your hamstrings. All three exercises work the glutes as well.

For the back, back raises, good mornings, reverse hyperextensions, and a variety of special squats (safety squat bar, MantaRay, front squat) will greatly increase back strength. Many of these squats as well as good mornings can be done with chains, bands, or weight release devices. Using a MantaRay, safety squat bar, or front squat harness

changes the length between the lower back and the center of the bar, lengthening it and thus forcing the spinal erectors to be worked harder than ever.

Because most of the muscles that squat also deadlift, our max effort day for squatting and deadlifting is the same day. We always add lat work on this day. Lat work and shrugs are done



next to last. For lat pull-downs, we switch bars and grips quite often, always hitting the lats from different angles. Rowing should be done as well. We do chest supported rows most often, one-arm rows occasionally, and barbell rows sparingly. Barbell and dumbbell shrugs are done as they also assist the bench press.

We do a lot of sled dragging. This will build tremendous hip and glute strength. We drag 200 feet at a time, which constitutes a set. Do six sets with weight that does not cause you to lean forward too much. If possible, do them the day after squat and deadlift day. This is active rest, which works as restoration and also raises work capacity. Kneeling squats also build the hips very well.

When it comes to squatting and deadlifting, the abdominals play a tremendous role. Some at Westside work their abs every day. I don't recommend crunches because they are mostly a waste. When you are squatting or deadlifting, your abdominals work while straightening your legs. That is why you should do lots of leg raises. Start with your legs bent and gradually work into straight leg raises. Also, do a lot of side bends. Your obliques do most of the work because of how they attach to the hip and back. Static abdominal work is important too. Learn how to push out and hold the abs against the belt for the duration of a lift. For sit-ups and leg raises, we often use chains and bands.

Zercher squats work the abs. Hold the bar in the crook of your arms with your hands against your chest. Squat while forcing out and expanding your abs. If you are always worried about your waistline, you are in the wrong sport. A strong waistline is big and powerful like any other muscle group.

Remember, after a core exercise such as a squat, bench, deadlift, or good morning, do 3–4 special exercises that pertain to that lift. By choosing correctly, not only will you become stronger but your form will be far better.

Muscle groups such as the pecks, quads, biceps, and all other “showy” muscles develop easily. It’s the hips, lower back, hamstrings, and glutes that no one seems to look at that do all the work. Pay most of the attention to the functional muscles, not the “showy” ones. If you want to build a tremendous future, you have to build a solid foundation.

SPECIAL EXERCISES – TRAINING THE MUSCLES

Our special exercises, such as triceps extensions, lat work, low back work, and abs, are performed in macrocycles every 2–6 weeks. Each macrocycle lasts 2–3 weeks and coordinates in with our speed or dynamic method day.

When controlling the amount of special work for a particular muscle group, do it instinctively. Think, does this exercise work for you? How are you responding to the work? Sometimes it is better to divide special work into separate workouts. Many times more work can be done in second workouts because rest or restoration methods such as ice, hot tubs, and massage fall between workouts. Many times simple rest acts as restoration.

Special work is raised throughout the first three weeks in an upward wave. For example, if you do glute ham raises for more than three weeks, the progress will stop. At Westside, we recommend training special work as hard as possible. By doing this, you're able to make further gains after three weeks. The lifter then switches to an exercise that closely mimics the preceding exercise. This is the conjugate method. As you can see, Westside utilizes this method in all facets of training. Even restoration methods can be constantly switched. You must learn to regulate training in this manner to succeed.

Exercises can fall into three categories:

1. general
2. directed
3. sports-specific

General exercises include the reverse hyper machine, glute ham raises, box jumps, inverse curls, lat work, ab work, triceps extensions, and hip extensor/flexor work. Directed exercises include good mornings, belt squats, deadlifts on a box or from a rack, floor presses, rack or board presses, and dumbbell presses. Sports-specific exercises include legal depth box squats, close grip bench, wide bench, and deadlifting with the opposite style that you normally use (sumo versus conventional).

At Westside, all three categories are used each week. They are not done simultaneously. Why? If a specific type of strength is not trained during a three-week period, a loss in strength of 10% or greater occurs. This is true for agility, coordination, and even flexibility.

Back Exercises

Many lifters train with a bad back. They often ask me what to do to decrease their chances of getting hurt while squatting or deadlifting. I fractured my fifth lumbar vertebra twice. In 1973, I pulled a 670 deadlift at 181. Shortly thereafter, I broke the vertebra while doing bent over good mornings. In 1983, I broke it again falling off my ice-covered porch. This time, the doctor said he wanted to remove two disks, fuse my back, and take off a bone spur. I declined.

Having successfully come back from those injuries, I have discovered many ways to work around a bad back or prevent our lifters from getting one. Back in 1973, my knowledge was limited. During 1974, I was on crutches on and off for ten months. One of my most important discoveries was chiropractors. Because of my inactivity, my spinal alignment was terrible. I had misgivings about going to a chiropractor, but my doctor wanted me to go in for traction for a couple weeks. I hate hospitals so finally I broke down and went to a chiropractor. To my surprise, my back was much better after a few adjustments, and I was able to start training again. However, my problem came back, and my back still hurt all the time.

In 1975, my back was still fragile. That's when I started doing reverse hyper extensions. Through the motion of rotating the sacrum in a safe way and the blood pumping action, my back was quickly rehabilitated to the point that I pulled 710 in 1977 at 198. We picked up many exercises as the years passed, and after breaking my fifth lumbar vertebra again in 1983, my rehabilitation was much faster. This time I used acupressure and acupuncture to speed up the healing. I also received oxygen injections directly into the muscle, which helped greatly. Aside from progressive medical help, we have found an array of back and abdominal exercises that have all but eliminated our low back ailments.

When squatting or deadlifting, a successful lift is dependent on keeping your back in a good position. This takes a strong back as well as strong abs. At Westside, we do max effort work for squatting and deadlifting on the same day—Monday. The same muscles work in these two lifts. It saves energy to lump together the special exercises that contribute to both lifts.

Let's first talk about the spinal erectors and how to develop them.

Good mornings

Good mornings are often used as a max effort exercise. There are many variations that you can use, and you can use bands, chains, and weight releasers to accommodate resistance. You can also vary the stance from having your feet together to standing with them ultra wide or use a lift under your heels like the old Paul Anderson style. Work up to a 1–3 rep max. As assistance exercise, do sets of 5–10 reps.

The following variations of good mornings can be used:

Bent over good mornings: Place the bar on your back in a squat position or slightly lower and bend over, rounding the upper and lower back. It is up to you how far to bend over. A lifter with a small waist will find it easier to bend over farther. This will build the erectors, hamstrings, and glutes by extending the legs and back simultaneously. Bent over good mornings with the legs straight build the erectors and increase flexibility in the hamstrings.



Arched back: This style will build static strength in the erectors, which contributes to keeping the back arched while squatting or sumo deadlifting. Lower the bar as far as possible without losing the arch.

Power arched good mornings: Use a very wide stance, a low bar position, and lean, don't bend, forward until the bar is in front of the knees. Heavy weights can be employed. This is not a quarter squat. Remember, the bar must be in front of the knees after leaning forward.

Combo squat/good morning: This one is very important for learning to extend all the squat and deadlift muscles. With a moderate stance and the bar held low on the back, bend forward until the back is close to parallel to the floor. Roll the lower back over and descend into a full squat. To stand up, straighten out the legs. This is very effective for building tremendous extension strength as well as tremendous tightness. You feel like your eyes will pop out when you're in the bottom.

Seated good mornings on a box: Sit on a parallel or above parallel box and bend over. This takes the legs out of the exercise, which is helpful if you are injured or have a large stomach.

Good mornings on floor: Good mornings done while seated on the floor are effective. Sit on the floor with an empty bar across the shoulders. Now, bend forward as far as possible. Breathe normally, or in other words, relax! Don't arch the back to return to the starting position but rather push with the heels. Your flexibility will increase rapidly.



Suspended good mornings: Suspend the bar on chains in the power rack. This way you start the movement from the down position, which can be a very effective way to raise your deadlift. Anu Turtiainen did a solid 893 after doing these while preparing for the 2002 WPO Finals in the Arnold Classic. Anu used a cambered bar on these, but the safety squat bar is another good option.

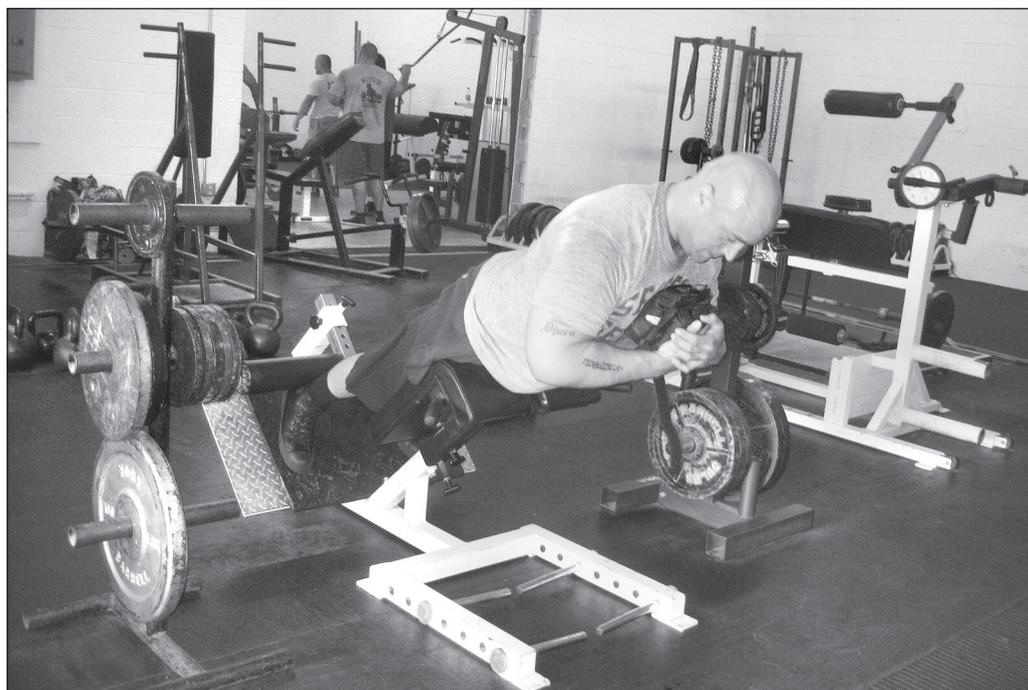
Back attack: We do a lot of work on a good morning machine appropriately named the Back Attack. This machine makes the strictest good morning possible. It anchors the feet with rollers and has an abdominal pad to keep the legs straight. A roller for the upper body makes it comfortable. Of course, we add bands to the weight. With heavy weight, we do 6–10 reps.

Several special barbells can be used for all of the good morning variations mentioned above. The camber bar, buffalo bar, and safety squat bar are the most effective ones. You can also change the strength curve by using the weight release device, flex bands, or chains. You can vary the work by using a lot of weight and a little chain, light bar weight and lots of chains, or heavy or light eccentric loading with the weight release. These combinations are known as the contrast method. Caution: Use of the flex bands can make one very sore because of the tremendous eccentric overloading from the tension of the bands, which causes delayed onset of muscle soreness (DOMS). This phenomenon occurs with any type of eccentric stress but especially with the use of flex bands.

Now, let's isolate...

Back raises or hyperextensions

These are done on a special bench where the feet are anchored and the torso is supported while you're lying face down. The bench can be parallel or at a 45-degree angle. Lower the upper body until your head is close to the floor. Then raise yourself up to parallel but no higher to avoid hyperextending the back. Perform reps of 3–8 and work up to a new max set whenever possible.



The 1968 Olympic weight lifting champ, Waldemar Bazanowski, was able to do 225 for four reps so get to work. Back extensions can be done with a rotation or by keeping the upper body shifted on one side so that you can target the obliques.

Pull-throughs with straight legs

Pull-throughs with straight legs really hit the lower back. For more variety, stand on a box or do a semi-squat to activate the hamstrings. Pull a low pulley cable through your legs while facing away from the machine. If done with the legs straight, this exercise will hit the lower back. Use high reps, sometimes to failure. If done with the legs bent, this will work the glutes.

Reverse hyper extensions®

For the mid to the very lowest part of the back, the reverse hyper machine is far superior to any back exercise. Not only does it completely work the low back, but it will rotate the sacrum. Also, on every rep when the plates are under your face, it opens the disks and allows spinal fluid to enter. This provides restoration as well as strength building.

At Westside, we do many 45-degree reverse hyperextensions. This style dramatically hits not only the lower back but also the hamstrings. They are done very heavy on either squat day or max effort day for the squat and deadlift. Six to ten reps are performed, and the number of sets depends on your level of physical preparedness. We do 2–6 sets.

Reverse hypers are the best exercise for lower back problems that I've ever seen. People with bulging or herniated disks can do them without pain. They rotate the sacrum in a very safe way with virtually no compression on the lower spine. At the same time, they build the glutes and

hamstrings.

We've been using the reverse hyper machine since 1975.

The real secret of this machine is that it tractions the vertebrae while you use it so it builds strength and works as restoration at the same time. We do these at least four times a week—twice heavy and twice light. Chuck Vogelpohl and I use the machine heavy before and after squatting on Friday mornings, and I do them light on Friday evenings. This is repeated on Monday, our max effort day. On Tuesday evenings, Eskil Thomasson and I do heavy again because they traction the back so you can do them repeatedly throughout the week. The reps range from 8–12 on heavy workouts and 15–30 on light workouts.

Sled dragging

One of the most effective lower back therapies is walking. It is the most natural way to rehabilitate a bad back. Dragging weights has a positive effect on the lower back, and the most effective ways to drag the sled are





forward and backward. Sled work can be used like any other exercise for building strength. Dragging the sled trains the glutes, hamstrings, and quads, depending on which style you use. Read more about sled dragging in the GPP section in this book.

Upper back and lat work

At Westside, we do an enormous amount of upper back work. The upper back plays a large role in all three lifts. For squatting, the farther back the bar sits, the greater the leverage. Notice that I said back on the back, not down.

Upper back

We perform many upright rows to thicken the traps. We also do inverted flies with dumbbells and dumbbell power cleans, sometimes very heavy for low reps, and we use a machine called the Hurricane, a multipurpose device for an assortment of exercises. These really add mass to the entire upper back. We have a high school discus thrower who does four sets of four reps in the one arm power snatch with a 100-lb dumbbell. By the way, we don't do the Olympic lifts. Rows of all types are done at least three times a week. The guys who only bench do rows just about every workout, which is four times a week. The full powerlifters do even more rows per week. Chest supported rows are a mainstay. Very heavy weights are used by most. Among the rows that are performed are the old-fashion t-bar rows with different handles, wide-bar and V-handle rows, one arm rows across the body, regular barbell rows occasionally with bands, and one arm dumbbells rows.

Lat work

Chins are great either with weight or without. But to be honest, we don't do them very often. Everyone does lat pull-downs at Westside, but the Westsider with the strongest lats told me that pull-downs don't help his lat strength as much as rows. This is the majority of our upper back



work. We also do a lot of band work and sled work for the upper back. Any time you do overhead pressing you are working the upper back. We do most of our overhead work seated. Most articles on deadlifting address upper back work to assist the deadlift. That, of course, is good, but the lower back is injured more often than all the other back muscles combined.

Zercher squats

Zercher squats will build all the squat and deadlift muscles, especially the lower back. Their inventor, Ed Zercher, intended for the bar to be lifted off the floor in the crook of the elbows. At 181, I made 320 off the floor and an official deadlift of 670 in 1973. But at 198, I could no longer bend over far enough to hook the bar in my elbows. At that point, I placed the bar on the power rack pins and squatted from there. Bob Burnett reportedly did 390 for five reps in 1967 and made a 675

deadlift at 165 lbs. We now do Zercher squats with a Strongman rack. They can be done for 1–3 reps, but I prefer high reps of 8–12.

Deadlift using the opposite style

Most sumo deadlifters train a lot with conventional style, but how many conventional style lifters use sumo in training? Training the deadlift in the sumo style will eliminate a great deal of back trauma. It is also a good way to monitor your flexibility. Mariah Liggett trained sumo and pulled conventional at meets, pulling 484 at 132.

Leg Exercises

Whenever you have a tight lower back, you will also have tight hamstrings. In addition, a weak back is almost always accompanied by weak hamstrings. When doing any type of squat, occasionally wear shoes with heels because this places more of the work on the quads. Also, squat as deep as possible. Depending on the amount of resistance, the reps are 5–12 per set. All of the above squats can be accomplished holding a barbell or dumbbells. I hope some of the exercises mentioned here can raise your squat and deadlift. Some of the exercises are very old, and some are relatively new, but all are proven to work. It's up to you or your coach to place them where they can do the most good.



Glute ham raise

The glute ham raise is a highly advanced exercise. While kneeling on a padded bench with your feet hanging off the end of the bench, have a partner sit on your ankles to hold you down. Lower yourself slowly without bending at the waist until your chest touches the bench. Now pull yourself back up as if you were doing a leg curl.

Let me recommend two ways to work up to a full rep. The first is to lower yourself slowly and hold for 3–6 seconds at various points of this movement. This is very taxing on the hamstrings and glutes. It builds the top and mid-portion of the exercise. You can lower all the way down until your chest comes in contact with the bench and then use your hands to assist in the raise until your hamstrings and glutes can curl you up the rest of the way.

The second method is to lower yourself down to elastic bands located midway between the top and bottom positions. This will help reduce your body weight while you are lowering yourself, and it will help spring you back up to a kneeling position. As you get stronger, use fewer or weaker bands until you can complete a rep unassisted.

The inverse curl is a form of the glute ham raise. The glute ham bench is elevated in the back by about 30 inches. Do a partial leg curl and a back extension at the same time. Hold at the top position (do not push with the toes). This exercise works the hamstrings at the hip and knee insertions simultaneously. A standard leg curl will not do the same.

Dimel deadlifts

Use a shoulder-width stance and grab the bar with your hands outside your legs. First, stand up with your back straight and arched. Maintain this position and drop the bar to just below knee level by squatting down. Quickly return to the top. Do 15–20 reps for two sets. These can be done up to four days a week but only for two weeks at the most. These are named after my dear friend, Matt Dimel. They pushed his 820 squat, which was stalled for over a year, to 1010 in 16 months. The same exercise raised Steve Wilson's deadlift to his all-time best of 865.

Pull-through

The pull-through is a great exercise for the hamstrings. Face away from a low pulley machine. Grab a single handle between the legs. Walk out a few feet and squat down, letting the handle be pulled through the legs as far as possible. Use the repetition method. That is, go to failure on



each set. Three or four sets are plenty. This exercise will build the hamstrings where they tie into the glutes.

Belt squatting

The belt squat requires a special belt—the squat belt. The weight hangs from the belt, allowing only the lower body to do the work. You may have seen our belt squat machine in our squat video. Belt squats can also be done on an incline. Don't lock out your legs.

Incline squats

Do these with a MantaRay or on a flat surface. The safety squat bar can be used.

One-legged squat

Do these with one leg supported behind you on a bench. This is also called a sprinter's squat. You can hold on to a support for a little resistance. The hardest one-legged squat is done by balancing yourself unassisted.

Leg curls with bands

Do these seated on a bench in front of a power rack. Secure a band to the bottom of the rack, hook the band with the back of your ankles, and pull your feet under the bench.

Deadlifts behind the back

This will build great leg strength for deadlifting. If you have large hamstrings, this exercise may be difficult. Ano, the great Finn, is experimenting with these to get some leg drive back into his deadlift.

Squatting can also be done to develop flexibility. Here are some different types of squats:

Lateral roll squat: Start by squatting down as deep as possible. Roll your body weight to the right leg in a lunge position, shift to the left leg, and stand up. Squat down again and repeat in reverse.

Frog squat: Squat down with your hands over your head. Then place your hands between your legs and touch the floor.

Side-stepping squat: With a jump, step out laterally with both feet while descending. Stand up and repeat.

Uneven squat: While squatting, place one foot on a box about six inches high and do full squatting.

The variety of squats presented here are intended for flexibility and agility, something that most lifters lack. Many of these squats are illustrated in *Twisted Conditioning* by Bud Jeffries (1-866-STRNGER). This book has training tips for powerlifting, Strongman competitions, and no holds-barred fighting such as Vale Tudo, which I'm a big fan of.

Other leg developers include pushing cars forward or backward and walking with a heavy wheelbarrow. Jesse Kellum likes this type of training at certain times of the year, and his legs are just about as strong as I've ever seen. You can also do front squats, free squats, or Hindu squats for high reps in the 20–500 rep range.

Wall squats: Jesse Kellum suggested that I try these. This is a static squat. Slide your back against a wall to an angle where you want to work your legs and hold for 15–60 seconds.

Plyometrics and jumping

Paul Anderson was doing jumping exercises in the 1950s. He would jump onto boxes of different heights to build explosive leg power. Norm Schomanski, our great Olympic lifting champion, also did a lot of jumping. He was reputedly able to jump onto a four-foot high bar top at a local tavern. One of the benefits of kinetic energy on the lowering phase is that it produces a phantom loading effect on the landing. I highly suggest you do a lot of research on plyometrics before using them in your training. They must be used correctly.

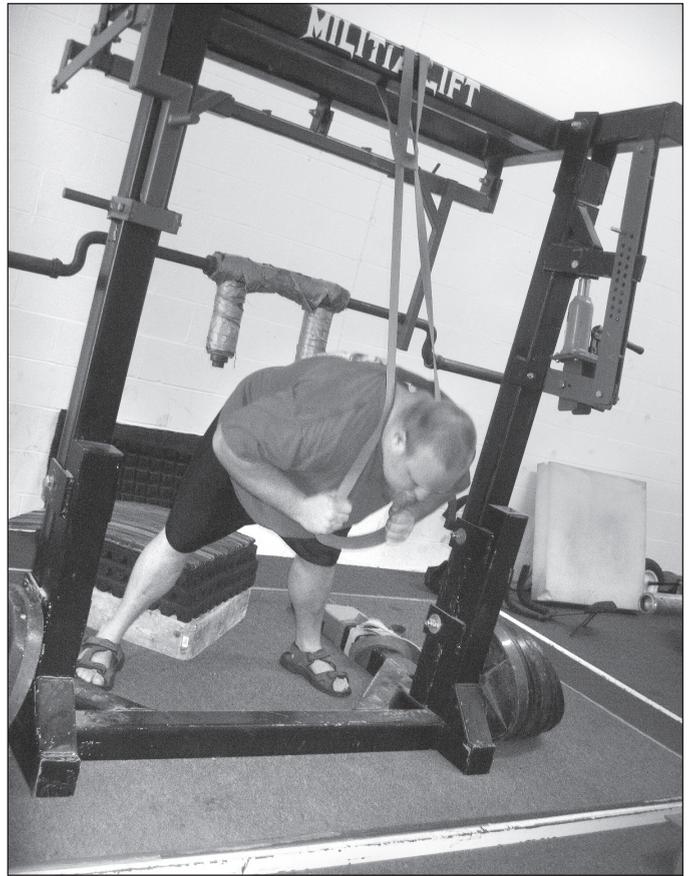
Abdominal Exercises

Abdominal strength is extremely important in preventing back injury. There are many back and abdominal exercises to choose from. These are just a few. Some will work for certain individuals better than others. That is precisely why you need many to choose from. The information in our series of articles and this book is the result of experimentation by the Elite powerlifters we have developed over the years. We have a system that will teach you to teach yourself. For example, learn to use your abs correctly while wearing a lifting belt. You must push out against the belt. It is very important to push out to the sides or exert outwardly with the obliques. This will start the action of straightening out the legs. Please don't be confused by bodybuilding magazines. Your hip flexors/extensors and abs must work together.

Standing abdominal work

We do a great deal of abdominal work standing up, and why not? When you fight, wrestle, play ball, and, of course, lift weights, you are standing up, not sitting.

Attach a strong strap from your power rack to the front of your belt and lean back until there is no slack in the strap. Now, slide your feet forward until you are leaning backward. This will



place your abs in a pre-stretched position. Crunch your abs while holding a medicine ball or cable device behind your head. This will work the abs very effectively. Hook the strap on the belt to do oblique work. As a bonus, hook the strap to the rear of the belt, and with your body inclined forward, perform deadlifts with a barbell or dumbbells. This is great for the lower back,

hamstrings, and glutes.

This is just a partial list of exercises that will help fix a bad back, or more importantly, prevent one.

Side bends

In my opinion, the side bend is the most important exercise for the abs. The obliques not only work as stabilizers but are responsible for hip extension



when lifting off the floor or out of the bottom of the squat. You must learn to push the abs out, expanding them against your power belt. Side bends with a dumbbell at a time are great for this. Holding a dumbbell in your hand, bend to the side and return to a standing position.

Side deadlifts

Side deadlifts also work the abs and obliques. Stand next to the bar, facing the plates on the right or left end. Lift the barbell and try not to bend to the side. This exercise will build the obliques and stability in the glutes. We prefer to do our side bends with the help of an overhead cable machine. Stand with the lat machine to your side. Using a triceps strap held against the neck, bend away from the machine and do a side bend. There appears to be little stress on the spine using this method.

Standing sit-ups with the lat machine

Hold a triceps strap around the back of the neck with the two ends held against the chest while facing away from the machine. Now, bend over as far as possible while pushing out the abs. Most lifters are very weak when first attempting this exercise but be patient. The weight will go up and so will your squat and deadlift. Use light weights for high reps or for a certain length of time. We will start our workout by doing 3–5 minutes of this exercise to warm up our abs and lower back. By adding weight, you will realize quickly how weak your abs are. Just compare the weight on the machine to your body weight, and it will open your eyes.



There are several variations of this exercise that we use at Westside. These include:

- medicine ball on back
- one leg in front
- different foot stances
- static hold on 2–3 positions for 2–5 seconds
- torso twisted to one side
- legs straight or bent

Leg raises

Leg raises of any kind are good. They are very effective when done hanging from a chin-up bar. To do these, raise the feet until you touch the bar that you are hanging from. These are great for strength and flexibility and are the hardest. You can also start with lying leg lifts with your legs bent and progress to straight leg lifts. If your shoulders are good, do hanging leg raises. Do them with bent legs until you are strong enough to keep your legs straight. Use weight if possible.

Leg raises, like most exercises, have many variations:

- lying on bench
- hanging
- doing one leg at a time
- using the static method
- using weight, bands, or chains as extra resistance
- holding medicine ball between legs

Landmine

We do a lot of rotational exercises on the landmine. This is a popular exercise for wrestlers and mixed martial arts fighters. If you don't have a landmine, place the end of a 45-lb bar in a corner. Grab the other end (use a handle if possible) and rotate the bar overhead from one hip to the other. For a better workout, superset these with the reverse hyper machine, rows, pull-throughs, good mornings, or lower back exercises. This will enable you to rotate the back in four directions and give you an unbelievable pump. This exercise has pushed up our deadlifts at Westside.

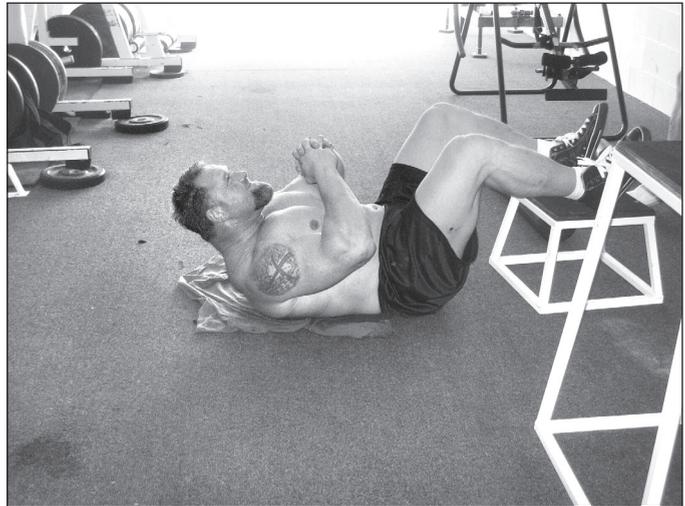
One-arm lifts

Lifts performed standing with one arm build stability. Exercises like one-arm presses or one-arm snatches rotating from one side to the opposite side of the body train the spinal erectors and obliques. Use a dumbbell or a barbell shorter than standard length or try Pavel Tsatsouline's Russian kettlebells for variety. The Hurricane is also a very efficient tool for torso and upper back strength.

Sit-ups

Many types of sit-ups can be done. A bent leg sit-up is worthless unless you have a very weak back and stomach. Try these variations:

1. Sit-ups while holding a ball or cushion between the thighs will realign the lower back. It also helps to decrease the pressure on the back by increasing abdominal pressure.



2. Spread eagle sit-ups are done using a wide foot stance such as holding the feet under the bars of the sumo based power rack.
3. Try doing sit-ups with different bench angels. For example, try them while hanging from your feet in a chin-up bar.
4. Do sit-ups with added weight or bands for extra resistance.
5. Use the static method. Stay in the position for 3–5 seconds.
6. The Russian twist is a great variation. While holding the abs in a static position, extend your arms holding a plate and rotate from one side to the other.

Triceps exercises

Everyone thinks that a close grip bench will raise your contest bench press. At Westside, we believe this is very true. In fact, we believe it to be true so much that we find new ways to increase the close grip bench. Here are some of our favorite triceps exercises.

You'll find the extensions that we do at Westside here. Refer to the max effort exercise chart to find the pressing movements. They can be used for rep work such as a 3–5 rep max. The triceps account for most of your bench press progress. Learn to train them correctly because they are the key to a monster bench. Bench shirt or shirtless, if you don't become stronger, your bench will never increase.

Flared arm dumbbell extensions

One method is to do extensions with the elbows pointing out to the sides. The palms are facing forward and the thumbs are pointing down. Touch the bells on the upper chest. Now, extend the dumbbells to arms' length, keeping the bells touching all the way. This will build tremendous lockout strength. Start light and do high reps, for example 15–20 to start, and increase slowly. This is a tough one but very effective.

Dumbbell triceps extensions

Hold the dumbbells with the palms facing each other. With the palms straight over the chest, lower the bells by bending at the elbows. Lower one end of the bells until they touch the chest. Then rotate the elbows upward and back over the head. This will build tremendous tension at the part of the triceps that connects at the inside of the elbow. Without dropping the elbows too much, extend the bells. The rep range is 6–12 and about 60 total reps seem to work well. It's up to you whether you do multiple sets on the same weight or work up on each set.

You can do these in several ways:

- incline
- decline
- lying on the floor
- flat bench
- standing
- mini-band behind the back for extra resistance

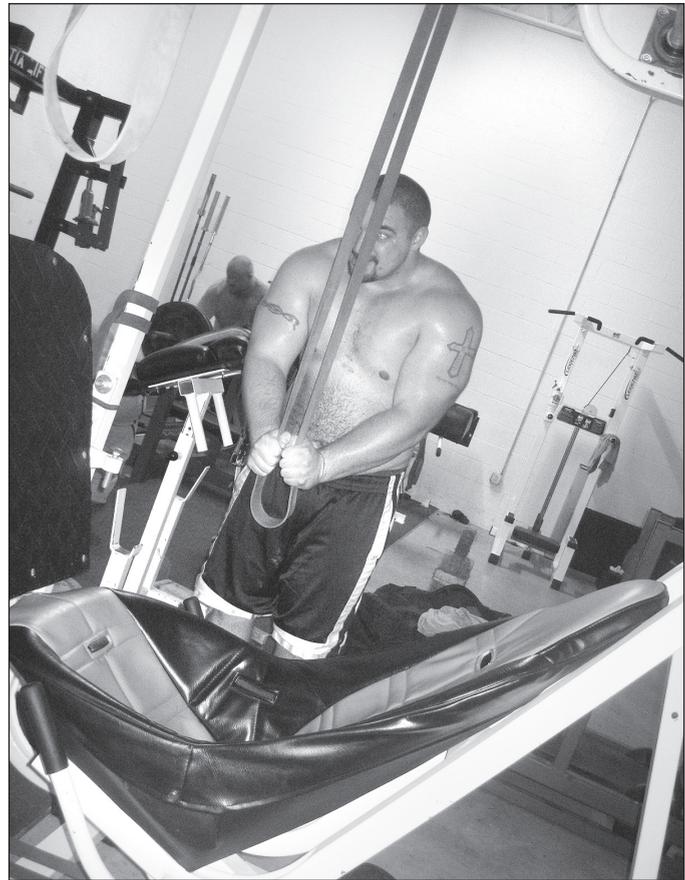
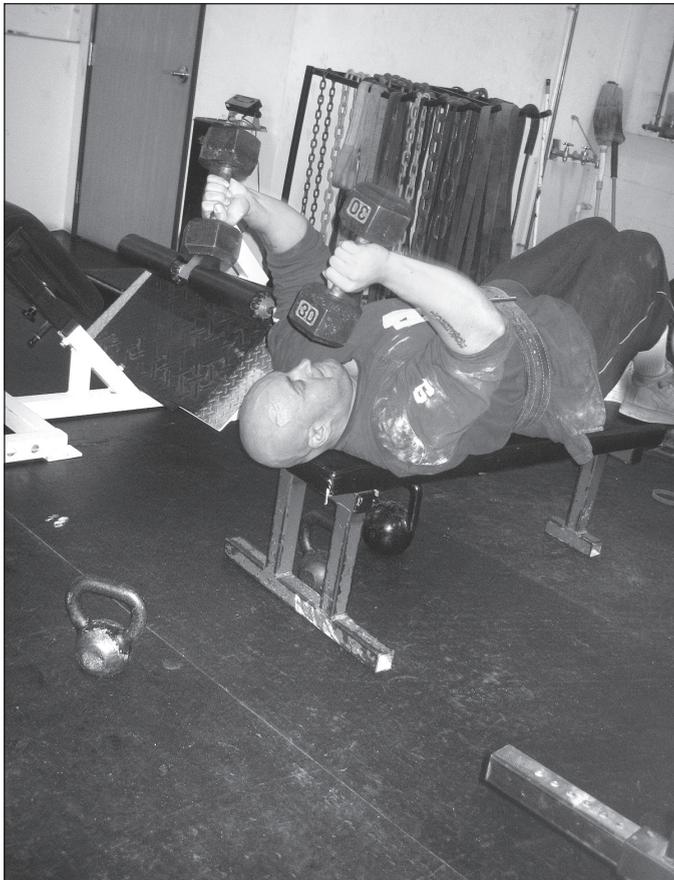


Exercises with bands

- Choke a band on top of the power rack and do band push-downs for high reps.
- Do triceps extensions with the band behind the head.
- Loop a band over the lat bar and do push-downs.

JM press

Another exercise that is popular is the JM press. It is done with a close grip, lowering the bar in a straight line down toward the upper chest and stopping about six inches above the chest. The elbows are at a 45-degree angle from the body, thereby taking the delts out of the lift and leaving the triceps to do most of the work. I refer to these as JM presses in honor of JM Blakley, who first demonstrated them for us. He is very dedicated to powerlifting and has traveled all over the United States and



overseas to compete. I'm honored that he represents us with such passion and dignity.

Use a close grip and lower the bar straight down over the upper chest or collarbone with the elbows held in a normal position. This reduces the delt work and places the most stress on the triceps. This is accomplished by having the hands closer to the face than the elbows once the descent starts. Stop the bar at your worst possible leverage point.

Straight bar triceps extensions

Remember to hold the elbows tightly in. Don't use too close of a grip. Start the bar over the lower chest. Lower it in an arch by raising the elbows and pushing them toward your head. This will put the most of the work around the elbows, and that is where your extension strength comes from. This is strength building, not bodybuilding. Work up with five rep sets. We don't want to develop the lateral head of triceps.

There are several variations of this exercise:

- incline
- decline
- lying on the floor
- flat bench
- using mini-bands
- using chains

For barbell extensions, the bar can be lowered to the:

- forehead
- nose
- chin
- throat



The closer to the throat that you lower the bar, the harder you hit the area around your elbows.

Doing special exercises like the ones listed here has kept our lifters healthy at Westside and greatly contributed to my totaling USPF Elite for a span of over 24 years even after several injuries. Like me, there may still be hope for anyone who tries.

I hope you can see how all this works together with our rack pulls, band pulls, and all the special squats that we do. There are a vast number of back exercises for the upper and lower back that complement the three power lifts. One of the above exercises could be the difference between success and failure.

PLYOMETRICS AND POWERLIFTING

Plyometrics were developed by Yuri Verkhoshansky in 1958 after he watched a triple jumper train. He was astonished by the energetic rebounding after each landing in the triple jump. That energetic response was the basis of plyometrics. Plyometrics have proven vital in the training of explosive as well as absolute strength.

Yuri Verkhoshansky is referred to as the father of plyometrics. His work on shock training is well-documented from the early 1970s. Exercises consisted of depth jumps, plyometrics, bounding, and medicine ball work, leading to a few special devices. What is shock training? It's a system of impulsive actions of the shortest duration of time beginning at the end of an eccentric phase and the beginning of the concentric or overcoming, phase. It is a process of a fast stretch followed by a voluntary action.

At near Earth, the speed of gravity is 9.8 meters per second. When an athlete drops off a box to the floor then immediately rebounds, the energy is kinetic energy. This kinetic energy is transferred into the soft tissue and connective tissue of the body. Remember, one should be able to squat two times their body weight before attempting to use plyometrics. A 300-lb man may not safely land from a high altitude drop of the same magnitude as a 150-lb man. Why? It's dangerous. Kinetic energy increases when mass or velocity is increased: $KE = \frac{1}{2}mv^2$. From this equation, one can see that increasing the velocity of an object has a greater effect on the kinetic energy than increasing the mass of an object. As you increase the velocity, the kinetic energy becomes exponentially greater.

Velocity can be increased through the use of bands. If you merely drop off a box and land on a surface, you are moving at 9.8 meters/second. The kinetic energy is proportional to your mass and speed. Two different masses fall at the same speed, but a larger mass will have more force upon landing and an even greater force when acceleration is added by attaching bands with a great amount of tension at both the top and bottom of the landing.

Newton's second law states that force = mass x acceleration. Awhile ago, we did a study at Westside to measure the effect of bands. We found that when box squatting with weight only, the eccentric phase was approximately 1.6 seconds with 550 lbs on the bar. However, when using a large amount of bands and a small amount of weight, the eccentric phase was 0.52 seconds, three times faster. Here, a virtual force occurs (i.e. a force that is present but not recognized).

For example, a certain thickness of ice can support a 50-lb ball without breaking. If the ball is dropped from a distance, moving at 9.8 meters/second, it breaks the ice on landing. Although it still weighs the same, it had acceleration in the second case. This is the case when squatting with bands. When we land on the box, a virtual force occurs due to acceleration.

When power development is discussed in the United States, the Olympic lifts come to mind. However, jumping and plyometrics are used in Europe where they are much more sophisticated



in their training methods. The greatest amount of power is developed with lighter loads. I recommend that everyone, except for the lightest lifters (165 lbs and below), only jumps on boxes for explosive power. First, if you are to jump, you must avoid detraining by doing small loads of jumping, first to

condition yourself for more directed work toward improving your sport. You must choose the right amount of jumps per week and per month leading into a yearly plan. Most importantly, you must choose a jumping exercise that is specific to your training.

There is no eccentric phase in a depth jump. By definition, in an eccentric action, the muscle must be active during the stretching phase. The energy created by the body dropping is gravitational potential energy. When the body lands on a surface, it becomes kinetic energy, which is transferred in the body as a stretch reflex.

It is essential that explosive strength play a large role in training because it isn't only a means of developing absolute strength but also a method of raising physical fitness that is directed toward solving a specific-sports task. Of course, many sports combine jumping as part of the sport itself such as in ball games and gymnastics. Here, jumping, or plyometrics, aids greatly in raising GPP. In sports like powerlifting, explosive strength can be developed with the reactive or contrast method, which includes the use of weight releasers, bands, or chains or by special means such as jumping onto a box of a designated height or standard plyometrics, which refers to depth jumps, altitude jumps, or bounding drills on one foot or both. The reason for including these exercises is the to develop powerful legs and hips.

It is important to direct a series of work to closely duplicate your sport, which in our case is the squat, deadlift, and bench. Two types of training methods are used to develop explosive strength. The first is the use of a barbell with special attachments such as bands, chains, weight releasers, or a combination of all three. The second method involves jumping exercises. Jumping exercises and/or plyometrics cause the fastest rate of explosive strength because as resistance is lessened, the motion time becomes shorter.

This is caused by a sudden eccentric stretch of the muscles and connective tissue preceding a voluntary effort. Of course, the faster the eccentric phase, the faster the concentric phase through an increase in kinetic energy. How can this be accomplished with a barbell? Explosive strength can be developed by using moderate resistance with maximum speed. This is the dynamic method. Two simple training methods to accompany the dynamic method are the box squat for

squatting and pulling strength and the floor press with dumbbells or a barbell. For both exercises, after the eccentric phase, many of the muscles are in a relaxed state.

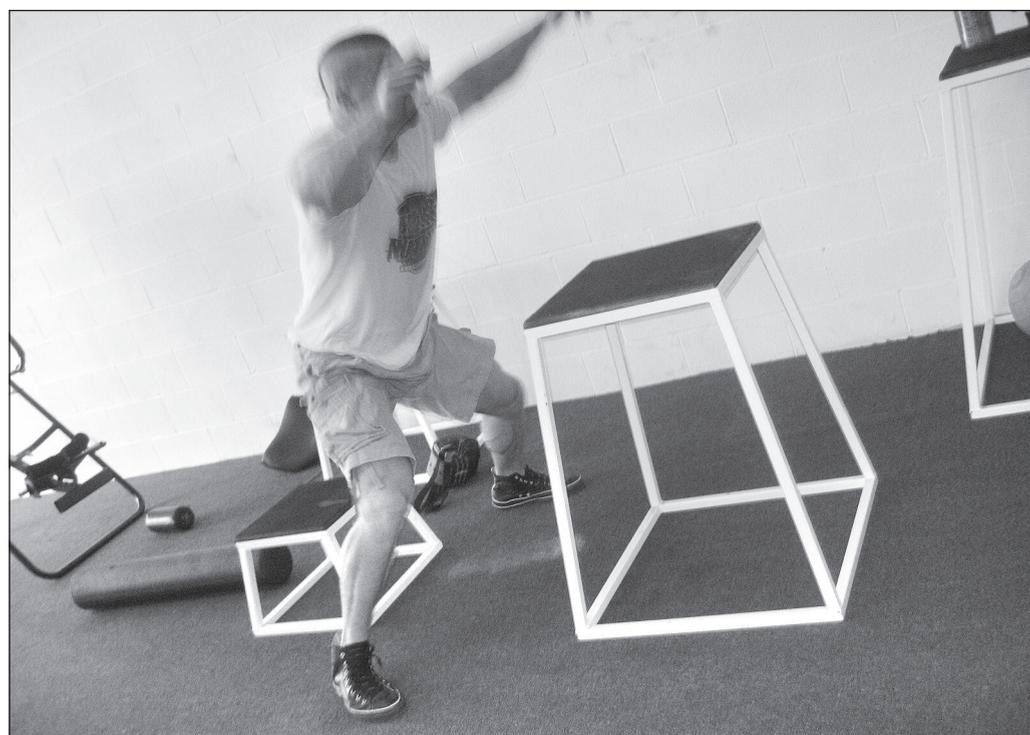
This is followed by any explosive concentric motion. This will increase the rate of force development (RFD). We also find that maximum concentric work also increases the RFD. With the use of extremely heavy weights, bar velocity may be slow, but nevertheless, overcoming a large load dynamically causes a fast RFD.

The Practice of Plyometrics at Westside

At Westside, we do quite a lot of concentric squats, benches, and good mornings, that is, without an eccentric phase. I believe this would help weight lifters greatly in the United States. They lift their weights fast enough but can't move world class poundage. Let's look at the contrast methods. We will load a barbell with 80% of a 1RM and place 20% on weight releasers. For example, 400 on the bar at the top equals 320 lbs of bar weight and 80 lbs on weight releasers or (preferably) chains. After the eccentric phase, the 20% is released from the bar making the load lighter on the concentric phase and building explosive strength.

A more advanced method is to use jump-stretch bands on the bar, using a moderate amount of bands to increase the lowering phase. This added acceleration downward will increase kinetic energy. A light amount of bands plus a light weight (40–60% of a 1RM) causes an over-speed eccentric phase and accommodates resistance in both the yielding and the overcoming phases.

A third method is box squatting. Always use a box when doing your dynamic day squats. Learn to box squat properly (i.e. the Westside way). Box squatting allows you to overcome a load concentrically after a static phase where some muscle groups are relaxed. This produces a higher RFD than all other types of squatting. Note to track and field trainers: At top sprint speed, 5–6 times body weight is being imposed on the runner, many times causing stress fractures. At



no time have I seen stress fractures from box squatting, nor is it possible to use 5–6 times body weight.

A fourth method is to attach two sets of bands to the bar. After performing the first rep, re-track the bar. Have your training partners remove a set of bands and immediately do a second rep. One more method is the lightened method. Hook strong bands in

a power rack or Monolift at the top. Next, place a loaded bar in the bands. It should be lightened by 20% of the max at the bottom. For example, a 750-lb squatter would first load the bar to 150 and then add weight. Train with 50–60% of your 1RM, representing the weight at completion, for explosive strength. A 750 squatter would use 375–450 for 10 sets of two reps with short rest intervals (no more than 60 seconds). The lightened method works well for floor press as well as regular benching, power cleans, high pulls, and push press or jerk in front or behind the neck with a barbell or dumbbells.

It is advantageous to use bands for the over-speed eccentric phase. For upper body explosive strength, use jump-stretch bands to enhance the eccentric phase during ballistic benching. Lower the bar as fast as possible and catch it before it touches the chest. Reverse to the concentric phase as fast as possible.

How can explosive strength be trained in the deadlift? Use the lightened method. Attach bands at the top of the rack to reduce 135 lbs to zero at the start. Next, stand on a platform that does not permit the plates to hit the floor. Take the bar off a set of pins and lower until the bar is nine inches off the floor.

Reverse and pull explosively to completion. This works much like a hang clean and will serve the same purpose. By using the lightened method, one can get an explosive start. It works great for both explosive and absolute strength. This brings me to a question that I was asked recently at a seminar—why is the box squat superior to the power clean? It's simple. The box squat has an eccentric phase while a power clean does not. The eccentric phase utilizes the property of kinetic energy adding to the stretch reflex. Most lifters can hang clean more than an actual power clean for the same reason. But, remember, the squat weight can easily exceed clean weights and is more beneficial when done with the same speed. Absolute explosive power causes a much greater increase in power with respect to time by nature of a lighter load, most often body weight i.e. (jumping).

At Westside Barbell, we use the dynamic method throughout the year. Its purpose is not to build maximal strength but to improve the rate of force development and explosive strength. Of course, the lighter the load is, the faster the rate of force development.

Start by doing basic jumps. Drop down and flex quickly to start a stretch reflex. Jump on boxes of different heights. We like to have two jumping days per week: moderate jumps on Wednesday (no less than 12 and no more than 24 jumps at about 70% of the height of the box used on Sunday) and maximum jump day. For example, if your max jumps are on a 30-inch box, then use a 21-inch box on the light jump day. For those who use a 40-inch box, the light day would call for a 28-inch box.

Coming from a box squat only background, John Stafford's top day was a 44-inch box at a body weight of 285. A friend and former Olympian, Jud Logan, who was the U.S. record holder in the hammer, normally worked on a 44- or 48-inch box. His best is five jumps on a 54-inch box at 285 body weight. His greatest increase in the throws came with an increase in box height. This is because the greater speed with which you leave the ground causes you to jump higher. First, muscular force becomes equal to your body weight. When it exceeds your body weight, you jump upward and accelerate until maximum height is reached and speed returns to zero.

If you are extremely slow to start a load, here is a drill that works well. Kneel down on a gym

mat with your hips relaxed. Then jump to your feet. When you have mastered this, kneel again. However, this time place a bar on your back and do the same. Next, kneel down with the bar held across your lap and jump into a power clean. For the last stage, kneel down and jump into a power snatch. This will greatly increase your reactive time.

For specializing in pulling or squatting, my favorite method of jumping is done like this. Squat down onto a low box about 10-inches high. Relax and then jump onto a box about 20-inches high. After a warm up, hold weight or use a weight vest. I have never had strong front legs but have seen amazing results with this exercise even at 55-years-old. Eighteen jumps are adequate for a great workout.

Jud Logan advised me to do the heavy jumping on Sunday, the day before max effort day for the squat and deadlift, to eliminate delayed onset of muscle soreness (DOMS). This has paid off for me. After all, Jud gained his knowledge from the former east Germans.

Remember these points for jumping:

- Get in shape to jump
- Specialize
- Plan your jump loads
- Land on the middle of the box
- Keep all reps at maximal velocity

In the late 1960s, isometrics were used not only by the Soviets but also here in the United States by the York Barbell team. They were very effective but were overused because they didn't mix in other types of resistance. Plyometrics are overused and misunderstood in most cases. They should be just a small part of training for explosive strength.

Most kids jump rope, a simple form of plyometrics. Yes, it is very important to develop power quickly, but it is also important to maintain power for sports such as football, wrestling, and some running events. All ball players run fast and slow and have quick changes in direction. This is very taxing on the central nervous system. If one wants to become more explosive, he or she must raise maximum strength.

At Westside, it is common to see Chester Stafford jump onto a 35-inch box with a pair of 70-lb dumbbells at a body weight of 290 or Andre Henry at 460 jump onto a 20-inch box wearing an 160-lb weight vest. Neither man had a previous plyometric background. Phil Harrington, the world record holder in the squat at 900 at a body weight of 181, can also jump onto a 50-inch box. As his squat increased, so did his box jump. We have a thrower who trains with us occasionally. He can do a kneeling jump squat with 255.

When Jud Logan, the Olympic hammer thrower, failed to increase, he employed box jumps to push his throws to new lengths. He had a 440 power clean and a back squat of about 770. His box jump was an incredible 55 inches at 285 body weight. Jud was already strong and used box jumps for quickness to increase his throws just like Westside uses the jumps to increase our squat and deadlift.

In the book *Explosive Power and Jumping Ability for All Sports* by T. Starzynski and H. Sozanski, Olympic lifting is never discussed. Starzynski coached two Olympic gold medallists, and Sozanski is a coach and professor specializing in problems of training for jumping ability. Seated barbell presses off the floor are illustrated in their book.

Did you know that there are much better exercises than the standard Olympic lifts? Here are some examples:

- Kneeling squats (after kneeling down with the heels touching the glutes, jump into a full squat)
- Kneeling power cleans (the next progression is the kneeling power snatch)
- Kneeling split snatch and kneeling power snatch
- Straight leg power clean and snatch and clean
- Power snatch while sitting with the bar across the legs

We concentrate on box squatting and use the contract and reactive methods. Thomas Kurz stated in *The Science of Sports Training* that to develop explosive strength, explosive efforts can be used such as jumps, shot put, or jerking dumbbells or a barbell. “But it is easiest and safest to increase it by increasing maximal strength.”

Did you know that a wide stance squat works the quads to the same degree as a close stance squat but with the bonus of using more hip, glute, and hamstring muscles? Anyone who tries to squat as much as possible soon learns that a wide stance produces greater results. This was proven at a test at Ball State University. Did you know almost all college and high school football teams do power cleans and power snatches, yet they are not used in the NFL combines?

Did you know that there is a deceleration phase when lifting barbells? For this reason, you must use jump-stretch bands or chains. They accommodate resistance. When joint angles become more favorable such as at lockout, one can lift considerably more weight. With barbell weight, the bar can be too heavy at the start to generate sufficient acceleration to complete the lift. The bar can also be too light, and as it nears completion, it slows down causing a deceleration. The bands also can be used as a contrast method. As the bar descends, the band tension decreases. As one rises concentrically, the bands increase the load, causing a contrasting load difference. The contrast and reactive methods must be used for the development of speed-strength and explosive power.

Explosive Leg Strength

When most people look at Westside training protocols, they automatically think of powerlifting. But the truth is the Westside system is used in track and field and in football at all levels. I am very proud to have a picture of Johnny Parker of the Patriots and Kent Johnston of the Packers on the Super Bowl field when they played each other in 1997. They both had spent a week at Westside to learn to implement some of our methods in their programs. Johnny Parker is now with the 49ers and recently spent another week with the Westside guys.

Five major rugby teams from Europe have visited us and have had great results. Professional boxers, MMA fighters, wrestlers, and others have used our system. Why? If nothing else, it was to produce stronger and more explosive leg strength.

Absolute strength controls all strength gains. An analysis of Hill’s equation shows that the speed of movement is dependent on absolute muscular strength: $v = Ft/m$. This can be found in *Fundamentals of Special Strength—Training in Sport* (Verkhoshansky 1986). Thomas Kurz in *Science of Sports Training* reported many ways to become more explosive, but the simplest is to increase absolute strength.

One must constantly raise one's work capacity. This is a must for jumping and squatting. Bompa (1996) states that it can take four years to perform high-intensity plyometrics. Many books talk about methods and theories but not results. I love to read those books, too, but more importantly, I love increasing results.

So, how do you build explosive leg strength? This can be accomplished through the reactive method, jumping off hard and soft surfaces, over-speed eccentrics, box squatting (which causes a virtual force effect), and accommodating resistance. There are two major components of explosive power—a fast rate of force development and increasing velocity. This applies to light objects such as a shot put or a heavy object like a max deadlift. Common sense and science tell us that speed of movement is controlled by the amount of external resistance used. So light weights look fast. But can light weight alone move a 320-lb lineman backward? No. Lifting light weight will always produce a deceleration phase.

We have extremely strong squatters at Westside: 1141 at SHW, 1118 at 275, 1025 at 220, 905 at 181, and 575 by a female at 148. The latter four are world records. We are also very explosive: 50-inch box jumps, a box jump of 35 inches holding a pair of 70-lb dumbbells at 290, and a jump from a kneeling position to the feet with 255 lbs on the back at a body weight of 255. How is this done? The dynamic method is essential. This will not increase maximal strength but will increase the rate of force development and explosive strength. Here, box squatting is used for all squats. The box makes it possible to break the eccentric/concentric chain. The box height is just below parallel, and the interval method is used. The rest between sets is 45–75 seconds. A three-week pendulum wave is used.

The percents used are 75, 80, and 85% of a max box squat record. Then we wave back to 75% in the fourth week. As noted in *Managing the Training of Weightlifters* (Laputin and Oleshko), almost 50% of all lifts are at this percent for the snatch and clean/jerk and, for us, the squat. To accommodate resistance, jump-stretch bands must be attached to the bar. A large load of bands will eliminate bar deceleration. They also increase the speed in the eccentric phase. An increase in velocity has an exponential effect on kinetic energy.

We ran a test on Matt Smith, a SHW who at the time had a 930 squat. Matt box squatted 550 consisting of all barbell weight in roughly 0.9 seconds both eccentrically and concentrically. Then jump-stretch bands were attached to the bar in addition to the weight. The realized weight was 750 lbs at the top and 550 on the box. Because the bands pull the bar downward, the eccentric phase decreased to 0.5 seconds. The concentric phase was the same—0.5 seconds. How did Matt do this with the added 200 lbs of band tension? Over-speed eccentrics. Matt has now squatted an official 1141 lbs. How's that for results?

Not only did the bands increase kinetic energy, but the actual collision that occurred when contacting the box also produced kinetic energy. The same process occurs when a sprinter comes in contact with the track at full speed.

Speed-Strength. For speed-strength work, 75% of the total load should be from bands and 25% from weight. The concentric speed should be 1.0–1.3 meters/second. This will work regardless of your strength level.

Strength-Speed. For strength-speed, the ratio of weight to band tension is 50/50. The bar speed will be about 0.4–0.5 meters/second. After the bands are removed is where one becomes

incredibly powerful. Using a large amount of bands creates an over-speed eccentric phase causing tremendous reversal strength. Note: Band strength must be great at the bottom of the lift.

To become more explosive, one must constantly become stronger. This is exemplified by the famous weight lifter, Naim Suleymanoglu. His best clean/jerk was about 407 in comparison to his front squat of 518. Weight lifters are very explosive. However, to become more explosive, Naim became very strong, having a surplus of 20% in the front squat to his clean/jerk.

Another example is the throwing events. The object being thrown is constant in weight, yet the thrower is always trying to become faster and stronger. My friend, Jud Logan, a four-time Olympian in the hammer throw, was very strong and very explosive. His stats were as follows: 478 raw bench, 770 squat, 550 x 5 and 600 x 1 in the front squat, and 440 power clean. Like myself, in the 1980s, his top strength grew, but his throws stagnated. Some of his east German friends suggested he push his box jumps up. As he improved to five jumps on a 52-inch box and a single jump on a 56-inch box at about 275 body weight, his throws began increasing. I experienced the same type of progress after I started to use the dynamic method in 1983.

Not only does concentric speed have to be increased but so does the eccentric phase, which is the most important, as has already been discussed. Speed has to do with external resistance. That may be why Olympic lifts are popular for building explosive strength. But if you do jumping, Olympic lifts are not needed. Many coaches will argue with me, but I've done it their way. They haven't tried my way. At a Beat training center in Cincinnati, Ohio, Matt Weideman trained James Taylor, a professional football player, to jump onto a 59-inch box at 6' 2" and 205. Taylor also ran a 4.33 40-yard. His best box squat was 550, and he moved 315 at 0.8 meters/second. John Harper can jump on a 51-inch box at 270, and he is ranked eleventh nationally in the discus. One end of the spectrum is moving very heavy weights very slowly. The other end is to move the body as fast as possible. How? Jumping! A 42-inch box jump is the minimum height to reach an adequate amount of explosive power. We use the optimal number of jumps based on a maximum jump.

We use the formula as presented in Prilepin's lift table. For example, if your best jump is 40 inches, a 75% jump would be 30 inches, 80% 32 inches, and 85% 34 inches. When doing jumps in the 80% range, do 15 jumps per workout. This holds also for jumping with dumbbells, ankle weights, or a weighted vest, or a combination of any of the above.

At Westside, we do many squats and jumps off of soft surfaces. This causes the muscles to do more of the work and doesn't limit it to the ligaments and tendons. In two out of three workouts, we step down off the box onto other boxes. On the third workout and the highest box, we do a depth jump down onto a soft gym mat. We don't do an immediate jump upon landing. We just stick it with legs slightly bent landing on the balls of the feet.

Our goal is to jump as high as possible, and therefore, squat as much as possible. We do it the same way—off a box. We duplicate the same procedure as box squatting. Before jumping onto a box, we first sit on a box, relax, and then jump. This produces a much greater effort.

The forces that produce movement are external, internal, and reactive strengths. This was established by Bernstein (Verkhoshansky 1986). When lowering onto a box, a greater amount of kinetic energy is expressed because mass as well as speed contribute to kinetic energy. Landing on the biggest part of the lower body will yield an increase in kinetic energy. In addition, by lifting the feet and slamming them on the floor, an over-speed eccentric phase occurs. This

combination very effectively increases jumping power. I have had veteran NFL linemen long jump their best in 1–2 sessions.

The stretch (eccentric) and shortening (concentric) phases cause reversible muscular action. If you do very heavy slow squats with the aid of over-speed eccentrics by using bands with weight and move the fastest with no resistance (box jumps), the sky's the limit. Remember, explosive strength is somewhere between strength and speed. By using these two elements, you will reach your desired results.

Using the Virtual Force Swing

When doing pure plyometrics such as dropping from a prescribed height, the speed of descent is about 9.8 meters/second or the speed of gravity near earth. With depth jumps, there is an immediate rebound, causing a powerful stretch reflex produced from the kinetic energy of the dropping phase.

We do not use depth drops. Rather, we use a swing. It is much like the one in Figure 6.12 in the book *Science and Practice of Strength Training* by Zatsiorsky. That swing can be changed by increasing the mass and range of motion. Our virtual force swing does the same thing. In addition, we can adjust the amount of speed desired. It is designed to convert potential energy into kinetic energy. We know through physics that increasing the mass is not as effective as increasing the velocity in order to increase kinetic energy.

When inanimate objects such as pool balls collide, no kinetic energy is lost. This reaction is referred to as perfectly elastic. However, in humans, it is somewhat different because of the inhibition of myotactic reflex receptors. Mechanical efficiency (ME) has been studied for years. In studies by Margaria (1968), Kaneko (1984), and Acra and Komi (1986), they show that the velocity of shortening or stretching influences the value of ME. It is also known that the stretch-shortening cycle will cause very different loading conditions with different ME (*Strength and Power in Sport* by Komi). Having said this, it is easy to see why the virtual force swing (patent pending 2004) is so effective.

Potential energy of the tendons and soft muscle tissue can be released two ways. If it is done slowly, the energy is released slowly. If it's done quickly with a short amortization phase, it produces a high level of power. Just imagine the advantage of a swing where it is possible to adjust mass and velocity.

Much is known about the eccentric phase. It causes most muscular soreness or delayed onset muscular soreness. This soreness can reduce dynamic strength and damage the myofibrils and connective tissue (Friden 1983). Eccentric work can generate much higher forces due to the tension generating capacity of the connective tissue. This can cause an increase in tensile strength of the tendons and other elastic components of the muscle complex (Garrett 1986). When high velocity eccentric work is introduced progressively, it enables the connective tissue to resist high impact forces that accompany high impact activities such as jumping, running, and depth jumps.

High speed or over-speed eccentrics are vital to superior training and results. When squatting or benching during the eccentric phase, you will invariably descend slower as the weight grows heavier. This isn't conducive to speed-strength. It's as simple as this—if lowering a barbell slowly is right then plyometrics are wrong. However, we know that's not true. Remember our



experiment with over-speed eccentrics using a high percentage of band tension versus a lower percentage of bar weight? The same is true for the virtual force swing. Using a large amount of bands to increase velocity and adding weight plates to change mass will produce a very positive training effect. Increasing velocity has a much greater effect on kinetic energy than increasing mass. This

kinetic energy is transformed into reversal strength.

The virtual force swing is essential for sports requiring extreme strength or explosive power during take-offs and landings and for jumping, sprinting, or lifting. Its value can't be duplicated in any other way because one will invariably use more eccentric muscle tension and slow the yielding phase causing a lessening effect on the reversal phase.

Part III

MISINFORMATION ON STRENGTH TRAINING

U.S. Approach
The Bodybuilding Approach – Hit or Miss?
Misinformation on Bands
Recommended Reading by Louie

THOUGHTS ON EQUIPMENT

Personal Gear
How to Use a Bench Shirt
Coaching Equipment – The Tendo Unit
Gym Equipment

WESTSIDE BARBELL STATISTICS

Top Ten Charts
Westside Club Stats

WESTSIDE EXERCISE INDEX

MISINFORMATION ON STRENGTH TRAINING

Every time I pick up a *Powerlifting USA*, I see some miracle squat program that calls for squatting 3–4 times a week. This is ridiculous, to say the least, and impractical for the full powerlifter. Those four times a week programs are intended for sports like track and field and rugby or sports for conditioning, not powerlifting. It would kill a bench press, and how would one do deadlifting workouts during this time? If you had bad form, this type of training would make it worse. If you have a muscle group that's lagging, you will have an injury before long. If you want to learn to box, why don't you box four times a week with Mike Tyson. Right, you would land in the hospital for sure.

The U.S. Approach

I am fascinated whenever my pit bull, Jackie, chases his tail. Round and round he goes, going nowhere fast, until he finally realizes that he's right back where he started. But I will give him credit. At least he knows he's going nowhere fast. My dog attended obedience school for four weeks, so maybe he has an advantage over his human counterparts, doctorates in exercise physiology in schools that are still teaching progressive gradual overload.

I recently read an article written by a U.S. author with a doctorate. He described a yearly plan consisting of four phases. The first phase was designed to increase muscle mass (i.e. hypertrophy)



and the training base. A point that must be made is that after the end of phase one, your muscle size started to diminish by 10–15% causing, in a sense, a detraining effect in as little as two weeks. The stronger the lifter, the faster this will happen. For example, work your lats or abs intensely for 2–3 weeks. This does not make much sense to me, and I hope it doesn't make sense

to you either. Raising muscle mass or raising GPP is not only a yearly goal but a multi-year goal. It can be accomplished by incorporating a dynamic day on which just one of a variety of special strengths is refined and a maximal effort day that occurs 72 hours later using several sets of well thought out exercises for the particular muscle groups that need strengthening. This can also be accomplished by doing extra workouts during the week.

What's wrong with the progressive overload system commonly used in the United States? Recall what I said about the force-velocity curve. In the early stages of the progressive overload system, the weights are too light—too light even for velocity work. This can be illustrated by throwing a whiffle ball. No matter how hard you throw it, it just doesn't go very far as compared to, say, a baseball. The weight of the baseball is more compatible with applying velocity and force. It's true that muscle hypertrophy is accomplished during this phase, but we are trying to achieve muscle strength, not size. As the weeks continue in the progressive overload system, the weights reach the 65–82.5% range. For a while, you are achieving maximum velocity provided that you are trying to do so. But as the weights grow heavier, the force factor comes into play. Slowly but surely, you lose that important factor—velocity. So as you can see, with the progressive overload system, it isn't possible to maintain max force and velocity simultaneously.

An additional negative effect occurs with progressive overload. You have lowered your volume to the point that it can no longer support the work needed to produce positive results at meet time. You may be at your strongest 2–3 weeks before the meet and fall on your face more times than not when it counts. One must train at 90% and above for maximum muscle recruitment, but this can only be done for a six-week period before training efficiency decreases dramatically.

For max strength, weights from 30–100% + of a one rep max are used, which causes a restricted blood supply resulting in a hard muscle contraction, thus providing a strength gain. The extra workouts that use weight or resistance less than 30% will affect restoration by increasing circulation. Ten extra workouts a week is a normal load. Doing special exercises for the classical lifts will increase your strength and perfect form. Concentrate on only the muscle groups that aid in raising the lift or total. For example, don't squat but do special exercises for squatting such as glute ham raises, pull-throughs, reverse hypers, or belt squats plus abdominal work. Also, do exercises for flexibility. In place of benching, do triceps extensions with a bar, dumbbells, or bands; delt raises; lats; upper lock; and external rotation work. With this method, one never stops building muscle mass. Switch exercises that work the same muscles (the conjugate method). This will allow one to constantly build muscle mass, GPP, and SPP. According to the article I was reading, phase two is the pre-competitive phase.

The author now states that one must raise top strength or absolute strength. During this phase, the lifter concerns himself with raising his squat, deadlift, and bench press using all major exercises, rack work, good mornings, etc.

Let's look at an alternative method—the maximal effort method. This incorporates the conjugate method using special exercises that closely resemble the classical lifts. Examples are squatting with special devices such as the MantaRay or cambered bar, concentric work, good mornings, or deadlifts using the contrast or reactive method. The weights are always 100% plus depending on your level of preparedness (i.e. how close one is to top lifting form), which incidentally should never drop below 90% of your all-time records. The maximal effort method is calculated much like the Bulgarian system, meaning that you should always be doing the most

possible even when far from contest time. As you can clearly see, this method allows you to lift your current max every week of the year, not just for a few weeks near one or two contests during the year.

Well, so far the doctorates from the U.S. advocate building muscle mass and then allowing it to disappear after ceasing the hypertrophy phase. This is not training but detraining. The same happens after phase two. However, the Westside method allows one to become larger, more muscular, and stronger all year long. The doctorate's classes are now learning phase three for explosive strength. This phase again lasts about six weeks. For this phase, the main goal is to increase bar speed. The weight here reaches 60–85% of a one rep max, and they add in plyometrics. Then, they move into the peaking or contest phase. Here, they recommend going from high reps, light weights or high volume, and low intensity to heavy weights and low reps, which results in lower volume but high intensity. Controlling volume and intensity is very important. When one does sets with 70, 75, 80 and then 85% for doubles, it is impossible for the lifter to understand what task is the goal. How do you determine if you are lifting with the same effectiveness at each percentage? If the weights are moving at the same max rate of acceleration, all is well. However, when the weights are raised that high, this isn't possible. Rule of thumb—train at intensities of 60%, 70%, 80%, or 90–100% +.

Prilepin's studies of more than 100 Olympic, national, and European champions showed that there is an optimal number of reps at certain percent ranges. If one uses one percent per workout, the task is easier to realize. Lighter weights are used for explosive and speed strength (60–80%) and weights of 90% or more for strength-speed. It is not advisable to train for two types of strength in one workout. It is done for multiple sets—one rep pulls, two reps for the squat, and three reps in the bench.

For speed-strength, use a pendulum wave:

- Week 1: 60%
- Week 2: 65%
- Week 3: 70%
- Week 4: 60%
- Week 5: 65%
- Week 6: 70%

Then drop back to 60% in week seven. This is a pendulum wave. This kind of wave is used because one can't increase in speed or top strength after three weeks of increasing the weight. If one continues to increase the weight, the bar speed will suffer dramatically, which must not happen. What about absolute strength? Three days separate the dynamic workout and the max effort day. This is because the major muscle groups recuperate in 72 hours. The max effort workout is performed with the conjugate method. This allows one to lift weights of 100% + each week. This is possible by switching exercises each week. Here are some examples.

The squat and the deadlift day:

- Week 1: ten-inch low box with the MantaRay
- Week 2: bent over good mornings
- Week 3: 12-inch low box with the safety squat bar

For the bench press:

- Week 1: 3-board press
- Week 2: floor press
- Week 3: lightened band press

There are many core exercises to choose from. For the Olympic lifter:

- Week 1: snatch grip high pulls
- Week 2: straight leg power cleans
- Week 3: cleans from above the knee

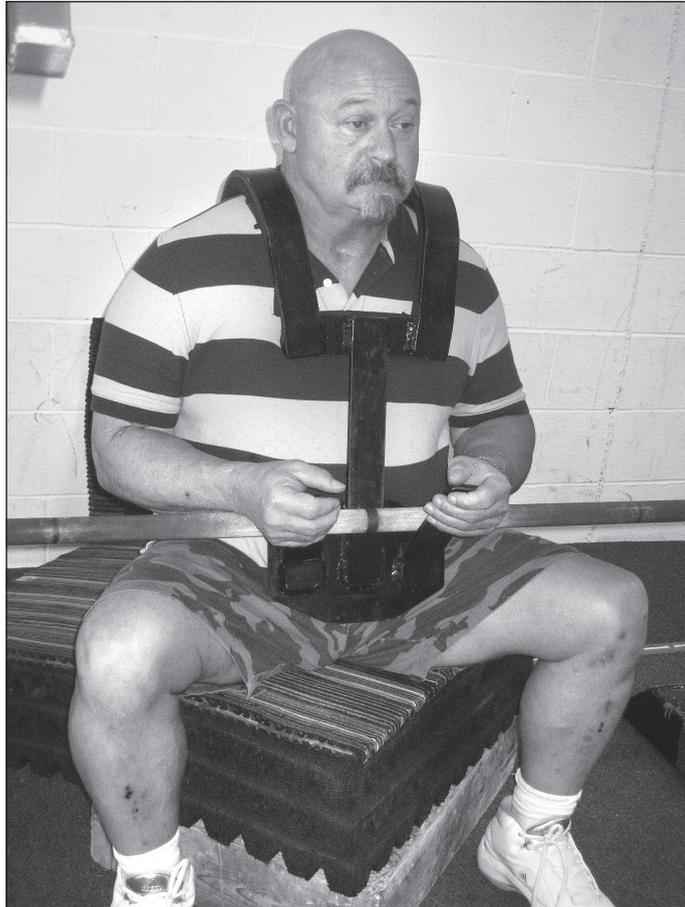
This method of training allows one to work on weak areas often overlooked by doing the classical lifts. It will also perfect form and coordination. This type of training also allows one to perform extra workouts for strength, restoration, and flexibility.

The Bodybuilding Approach—Hit or Miss?

Many readers may not realize that I am involved in the training of professional football teams and many college football and basketball teams. For example, the Kansas City Jayhawks and Utah Utes are heavily influenced by our training as it relates to speed-strength. Two of the professional football teams are the Green Bay Packers and the New England Patriots. Not a bad group to be associated with, huh? I also talk to a head strength coach who has been affiliated with a winning tradition in the NFL. He told me, although he was ashamed to admit it, that he has linemen coming into the league who can't vertical jump 19 inches or squat 300 lbs. He related to me that these players are from "high intensity training" (H.I.T.) schools and that this type of weight program is making his job next to impossible.

While I was at their camp, a professional lineman told me that when he was placed on the HIT program in college, his team was the top fifth school his senior year. He thought he was strong until the combines. When he got only 12 repetitions with 225 pounds, he was embarrassed. He was picked by a professional team that utilized our training and has an excellent strength coach. In two years, this lineman did 17 reps with 315 lbs. He made a remark that machines and HIT were useless. This got back to his old college team, who immediately banned him for life from their weight room. Gee, what a pity.

At Westside, we thought we would do some research on HIT. So Dave Tate and I looked into this, I must say, misguided method. What is their viewpoint? Where was their research taken



from? Why is it loved by some and despised by others?

First, let's look at the concept of intensity. Apparently HIT views it as a feeling like a pump, a term bodybuilders made popular. Is it a scientific term? No. Is a bodybuilder quick or explosive? No. If you know a converted bodybuilder who powerlifts, he almost always lifts well under what he appears to be able to do. Why? He has trained only the muscle, not the central nervous system. That is why smaller ball players are almost always faster and many times stronger based on percent of body weight. Bodybuilders develop no reversal strength or starting or accelerating strength. Any sport coach will tell you that acceleration is paramount in sports.

As Prilepin suggested, in order to achieve the proper intensity, one should use the rep/set scheme shown in the table to ensure the greatest development of speed and strength. He discovered that if seven or more reps were

performed at 70%, the bar speed slowed and power decreased. The same holds true when using 80–90%. Once one goes above the rep range shown, the bar slows, which translates to less power. Doing fewer or more lifts than Prilepin suggests causes a decrease in training effect.

Along the same parameters are the findings of Dr. Tamas Ajan and Professor Lazar Baroga. They describe the zones of intensity as follows: 30–50% is low intensity for speed-oriented sports; 50–85% is medium intensity for force-oriented sports such as weightlifting; 85–95% is high intensity for weightlifting and other sports; and 100% and above is maximum and over maximum intensity for the development of absolute strength.

Most authors who have studied strength as a physical quality examine it in four forms:

- absolute
- speed
- explosive
- strength endurance

The latter, strength endurance, is basically all the HIT program can possibly build. Strength endurance is characterized by a combination of great strength and significant endurance. It is needed by athletes who must compete for a prolonged period of time (3–4 hours) without diminished work capacity. Well, HIT may increase endurance, but it does not promote great strength. In fact, it eliminates it completely by neglecting the other three elements of strength—absolute, speed, and explosive.

Dave Caster showed me an interesting paper, *Strength, Power and Speed in Shot Put Training* by Dr. Poprawski, director of the Sport High Performance Institute in Toronto and former coach of world shot put champion, Edward Sarul. First, Poprawski realized the importance of intensity zones as described by Prilepin and the importance of using one weight percentage per workout. For example, weights of 50–75% were used for training speed and power. Much like our training, this training is based on a true max of, let's say, 500, 600, or 700 lbs. Poprawski realized that a shot put always weighs 16 lbs. Therefore, he found that it was best to use one weight for a particular workout and focus on increasing bar velocity rather than heavier weight to increase power. What was the key element for success? Speed, speed, and more speed.

Sarul was tested against other superior throwers, and while some could lift more weight, he was far ahead in tests of bar speed during the snatch and squats of 1–3 reps. His advantage in speed and the development of power was directly achieved by increasing bar speed while the others fell behind from lifting too slowly. What does this tell us? Fast is good and slow is second team. HIT proponents use a lot of machines. This is truly a mistake. No stability can be developed. Most machines work on the peak contraction theory. Let's look at the pec machine. If you load a pec machine to the max, starting the movement requires a max effort, which is very difficult and dangerous. Yet at the finish, where the most weight can be lifted because of accommodating resistance, machines show their downfall.

More importantly, let's consider the strength curve. Take the case of two 700-lb deadlifters. One may blast the weight off the floor to near lockout and then fight the last 3–4 inches. The second may have difficulty starting the bar off the floor, pick up speed, and lockout easily. What does this illustrate? In the real world of strength, these two lifters have quite different strength curves. If these same two lifters were to use a machine, only one would receive any benefit from that machine because the machine has a predetermined strength curve. That's a 50% chance the machine won't work for you. Also, a machine will not build stability. The only good thing about a facility full of machines is that the instructor could be a moron and it won't make any difference.

For some reason, HIT proponents think that explosive weight training is dangerous. One should know that explosive weight training should only be done after warming up past 25% of a one rep max. Look at the percent charts by Ajan and Baroga and then start at 30%. Don't push super light weights explosively until you reach 30%. If you're going to criticize something, you should understand it first.

Finally, I ask is anything more dangerous than football itself? HIT proponents also think that if you exercise slowly, you won't become slow. Have they heard of exercise specificity? A sprinter must practice sprinting to be successful. A long distance runner must learn to conserve himself to run a long distance. If a marathon runner started to sprint at the beginning, he or she would run out of gas long before the end of the race. If you work slowly, you will become slow, and you will be watching the fast kids play while you develop splinters in your butt. Remember that external force is directly responsible for speed. A boxer may appear very fast with eight-ounce boxing gloves, but hand him a pair of 100-lb dumbbells and he can hardly move his hands at all.

Although I am not a proponent of the Olympic lifts, they certainly have a place in weight training. However, I must say the term "quick lift" applies only to the snatch and clean and jerk when sub-maximal weights are used. With max weights, they are no quicker than any other lift. That's why we devote one workout a week to the dynamic method with weights close to 60%



of a 1RM max for multiple sets of 2–3 reps with short rest periods. We duplicate almost exactly the play time and rest time of football.

HIT advises you to work to failure, especially in the concentric phase, and sometimes up to 10–15 seconds. They call this an isometric rep. Well, if you were to exercise for that length of time, which is much longer than a football play, it would

be of absolutely no benefit. A good friend of mine was at a football conference and watched a demonstration in the deadlift for reps. The person did 20–25 reps with 425 lbs. Wow, what an effort! But did he recover in 35 seconds, the time period the football game requires? Absolutely not!

Wouldn't it be more beneficial to exercise for 7–8 seconds and repeat a set of weights? That's how the game is played, right? A workout like that described above is fine for a two-week mini-cycle, but not for any longer. A professional boxer trains for a three-minute round using training intervals of three minutes and a rest time of one minute. Football should do the same. Active work should duplicate a play and rest cycle. The friend I am referring to is a coach who is a two-time all American. Using our program, he currently has over 68 men who can power clean 300 lbs or more out of 90. I give credit to the recruiters for teams who use HIT. They pick skilled people who can sometimes survive HIT, but the linemen can't survive. If you watch the Heisman Trophy winner who was on the HIT program as a college athlete and is drafted by a professional team that uses HIT, invariably he is nonproductive or injury prone.

Guys, if you want to play for pay, check out the weight facility. If there are more machines than weights and you're not in the snack room, think twice before entering. The truth is the HIT philosophy comes from companies that sell machines. Even Arthur Jones realized that doing one set to failure was a mistake and retracted his statements years ago. It was merely a ploy to run as many customers through a facility as possible. It was later popularized by Mike Mentzer, a successful bodybuilder in the late 1970s and early 1980s. His claim to fame was the one-set-to-failure system. He was, I might add, the only one to use it successfully. It's not a good idea to try to be the exception to the rule. Instead, follow the accepted methods of weight training by working on the many types of strength that are needed in a sport. Just remember what Bill Starr said—only the strong will survive.

Misinformation on Bands

Bands and chains have been around for years. The fact is most people could not use them effectively to fully utilize their true benefits. This includes both powerlifters and doctorates at major universities. Marquette University ran a study and concluded that there was no value in using bands or chains. I have listed the amount of bands needed to develop specific types of strength such as strength-speed and speed-strength. I tested only subjects who squat at least 850 lbs (20 in total). I doubt any university in the United States could match that. If one does not have an Elite group of subjects, how can a valid study be conducted?

Some studies used only 10% band weight to accommodate resistance at the top. But what about the bottom tension rate? That is where the process must begin (i.e. virtual force, which is force that is in effect although not in actual fact).

Academic researchers seem concerned only with accommodating resistance or simply making the lift harder at the top. They have stated that it is useless because one is stronger at the top. If no eccentric phase is used, this would be true because of the relationship between force and posture. However, in the real world, one must first lower oneself to just below parallel during the eccentric phase and then rise concentrically to completion. Seldom do we miss at the bottom but rather from just above parallel to near completion. At least this is what I see in the hundreds of meets and training episodes I have witnessed. To prove this, near maximal or maximal lifts must be performed. This is why extremely strong lifters or athletes must be experimental subjects.

If colleges and universities are going to conduct studies on the effects of bands and chains, why not contact Westside Barbell and do it correctly and obtain valid results that can be passed along to grad students? We welcome any PhDs in exercise physiology to observe Westside in action. We would especially like Jeff Voleck, PhD to witness box squatting done the correct way as taught by Westside. I also invite Rafael Escamilla, PhD to investigate the various and correct methods for utilizing chains for the right purpose—to increase explosive strength. I will even send Westside's reactive method tape or special strength tape to any university to study, free of charge, if requested. Discover why strength athletes such as powerlifters must consider speed-strength work in order to succeed. All of the testing performed at universities made a significant mistake. They neglected to use a large amount of band tension at the bottom of the squat. Also, they didn't use a box. The tension should not be reduced completely by band shrinkage. Tension must be strong at the bottom as well.

Recommended reading

This is Louie's favourite book list for training information. These are the most important books where Louie gets his training information and uses it successfully on his lifters with World known results:

Books That Lou Recommends

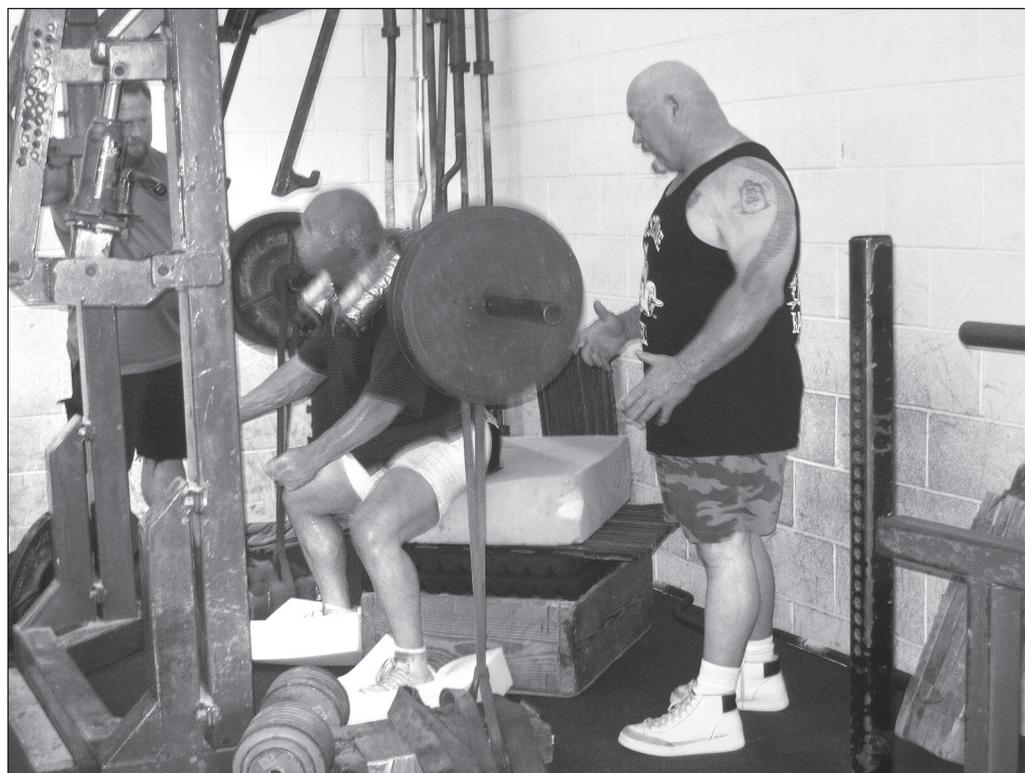
A Program of Multi-Year Training in Weightlifting by AS Medvedyev
A System of Multi-Year Training in Weightlifting by AS Medvedyev
Adaptation in Sports Training by Atko Viro
Basic Physics by Karl F. Kuhn
Beyond Stretching Russian Flexibility Breakthroughs by Pavel Tsatsouline
Circuit Training for All Sports by Manfred Scholich, PhD
European Perspectives on Exercise and Sport Psychology by Stuart J. H. Biddle
Explosive Power & Strength by Donald A. Chu, PhD
Explosive Power and Jumping Ability by Tadeusz Starzynski/Henry K Sozanski, PhD
Facts and Fallacies of Fitness by Dr. Mel Siff
Fitness and Strength Training for All Sports by Jurgen Hartmann, PhD
Fundamentals of Special Strength Training in Sports by YV Verkhoshansky
Manage the Training of Weightlifters by Nikolai Petrovich Laputin/Valentin Grigoryevich Oleshko
Periodization Theory and Methodology of Training by Tudor O. Bompa
Periodization Training for Sports by Tudor O. Bompa
Power Training for Sport by Tudor O. Bompa
Programming and Organization of Training by YV Verkhoshansky
Science and Practice of Strength Training by Vladimir Zatsiorsky
Science of Sports Training by Thomas Kurz
Secrets of Soviet Sports Fitness and Training by Michael Yessis, PhD
Serious Strength Training by Tudor O. Bompa
Soviet Training and Recovery Methods by Rick Brunner/Ben Tabachnik
Sports Conditioning and Weight Training by WM J Stone/WM A Kroll
Sports Restoration and Massage by Dr. Mel Siff/Michael Yessis, PhD
Strength and Power in Sport by PV Komi
Strength Speed and Endurance for Athletes Jurgen Hartmann, PhD
Strong Together by Walter Gain/Jurgen Hartmann, PhD
Supertraining by Dr. Mel
The Naked Warrior by Pavel Tsatsouline
The Training of the Weightlifter by RA Roman
The World Atlas of Exercises for Track and Field by Andrzej
Theory and Methodology of Training by Tudor O. Bompa
Training for Warriors by Martin Rooney
Warm-Up and Preparation for Athletes of All Sports by Zoltan Tenke/Andy Higgins
Weightlifting and Age by LS Dvorkin
Weightlifting Year Book, 1980, 83, 85, Fizkultura I Sport Publishers
Weightlifting Year Book, 1981, Fizkultura I Sport Publishers

THOUGHTS ON EQUIPMENT

Personal gear

I made the top ten in the United States in 1972 in *Powerlifting News*. At that time, they kept track only of the top ten, and this was without equipment. In 1973, I made a 1655 total at 181, again without gear—a 605 squat, a 380 bench, and a 670 deadlift. At the time, 1605 was Elite, but it was later adjusted to 1643. In 1980, at the YMCA Nationals, I made the top ten in the bench press with a 480. This was done without a bench shirt. Then with the introduction of power gear, from four-inch belts to squat and deadlift suits, and of course, the bench shirt, I totaled Elite in five weight classes through the years from the 181s to the 275s. In the 2002 rankings, my bench press was sixth at 575 in the 220 weight class. However, I experienced many setbacks before 2002. I broke my fifth lumbar vertebra in 1973 and again in 1983. I tore my right bicep in the USPF Senior Nationals in 1979. Six months later, I was lucky and won the YMCA Nationals and pulled a 705 deadlift, which was 33 lbs more than the weight with which I tore my bicep. But, as luck would have it, I tore two small holes in my lower abs and sustained a partial tear of a pelvic tendon (this still bothers me today).

I finally made my first 2000 total in 1987 at the YMCA Nationals in Columbus. My left knee



had been bothering me for about a year. I had a heavy workload for the next five years. While training for the APF Seniors in Pittsburgh, I suffered a complete patella tendon rupture of the left knee. I went in for a second minor surgery 14 weeks later and nearly died from a reaction to the anesthesia. A tracheotomy was performed and chest

tubes were inserted after I stopped breathing for four minutes. The chest tubes severed nerves in my ribcage causing sever shoulder pain to this day. I was seriously thinking about giving up lifting. But I trained hard and made a 680 below parallel box squat (there were no Monolifts at the time) with no knee wraps and without the straps up on the suit. Before this, my best squat was 821 at 242.

Meanwhile, Kenny Patterson benched 728 at 22-years-old in 1995 at 275 and was ranked the best pound-for-pound bencher. But in 1997, he still had not broken that record. We were doing a bench workout, and I said, “Damn, Kenny, I’ll squat 700 again before you break that bench record.” And he said, “Old man, you will never have 700 on you back again.” Well, I can thank Kenny Patterson because he brought me out of retirement at that moment. I competed seven times in the next 11 full meets and some push/pull meets. My best bench was 530 at 242 in 1992. I broke my bench record several times, ending up with 600 lbs (a dream come true for me). I also squatted over 800 in 1997. This was important for me because no one 50 years or older had made a 600 bench. I also squatted 900 and 920 at 52-years-old and had a 2100 total. I was not pleased because, as usual, I could not put my best lifts together, which were a 920 squat, a 580 bench, and a 710 deadlift at 235. After squatting 810, I recall telling Jesse Kellum that I could do 900. And he said, “Buddy, why don’t you?” So I did. He was a big help just being himself.

Chuck Vogelpohl also helped me greatly, always pushing me to the limit along with all my Westside training partners. Ambition, determination, and my powerlifting friends from around the world helped as well. But none of this could have happened if powerlifting gear had not evolved to the point where it is today. I went from no knee wraps to Ace bandages to horse wraps to the Canadian wraps such as the TP5000 wraps to today’s best—Frantz, Inzer, Titan, and Crain. They also have their brand of suits and bench shirts. You can choose from polyester, denim, or canvas. Each federation has its own rules so take your pick. This is the USA, and you have the right to lift in any federation that you choose whether it is drug-tested or non-tested.

At Westside we lift primarily in the APF, IPA, and WPO. It’s not the equipment that makes a champion but rather your mind. There is really no reason for the controversy over power gear. When Fred Boldt came to Westside, he used a poly shirt. It took three months for him to master a double denim. In his first meet, he did 450, but within a year, he made 540 in the same shirt. Where did the 90 lbs come from? Training. People come to Westside all the time to train and learn, and most walk out the door with an all-time PR. Don’t lie, dudes. You all would love to lift more. The simple fact is a lot of lifters can’t master the gear. For bench shirts, Bill Crawford has the golden hand. For canvas squat suits, Ernie Frantz is the man. At Westside, we have the greatest collection of benchers. Four men have held the all-time biggest bench in six weight classes, and I believe another will be added soon. Our lifters have evolved right along with the sport. Chuck’s squat of 1025 was done in a double ply squat suit in keeping with WPO rules. The bench records were done in double ply shirts. Nothing has changed since powerlifting began. Everyone looks for an edge. That’s simply sport. I remember 20 years ago some knee wraps had a rubber lining.

Bill Kazmaier had a pair of shoes that were supposed to be worth \$1000. In 1979 at the North American Championships in Canada, Fred Hatfield (Dr. Squat) showed up at the equipment check with a pair of knee wraps made of jock strap waist bands. The IPF referee looked at them and said

he couldn't wear them. They were twice as thick as normal wraps. But Fred won the argument and proceeded to break Ron Collins world record squat. He also had the squat rack pulled out of his way instead of walking the weight out. Was he cheating or innovative? Being a lifter, I thought he was innovative. Every lifter should take advantage of people like Dr. Squat who pave the way to bigger numbers. Is the use of squat and deadlift bars cheating? No. That's progress. When people see a boxing match, they want their man to knock out the opponent. Someone told me, you have to have the right size fish. I think equipment is the same. Dave "Zippy" Tate said he felt that the only regulation on power gear should be for novices, for example, up to a Master total. Then somewhat stronger suits could be used by those between Master and Elite.

Only the strongest and the bravest would use unlimited gear. That's right, I said the bravest. I have seen many lifters stop progressing because they were scared. That's right, they're scared, and they won't admit to it. They hate those who dare to break today's records. Look at what's happening today. It's embarrassing what raw lifters are lifting compared to the lifts in the early 1970s. Remember my 181 total of 1655. Jack Barnes held the top spot at 1745. At this time, Larry Pacifico was doing 1900 at 198. I saw Larry do a 530 bench at 198 in Cincinnati, and eight weeks later in Dayton, he benched 590 at 228. These lifts were done in full meets with a one and a half hour weigh in. But don't think for one minute that today's raw lifter would bench over 600 or squat in the 800s just by putting on gear. Powerlifting is years behind other sports as far as equipment is concerned, including swimming, track, football, and even bowling. However, the gear is getting better in every powerlifting federation including the IPF.

As race cars go faster, the rules call for more safety equipment to keep the drivers safe. The racing association made recommendations for a better safety belt harness after Dale Earnhardt's death. But in powerlifting, when new innovations come about, we're cheating? This doesn't make sense. I don't know a single strong man who complains about better gear. It's not easy to learn how to use bench shirts and squat suits. Matt, a 275 from Ball State University, had just made a 479 bench PR but could not master his new bench shirt. During a visit to Westside, he made a 530 bench in 45 minutes with plenty to spare. His shirt is 100% legal. He just needed to learn how to use it.

I notice that the people who bad mouth the top powerlifters are invisible at power meets. I have to attend the APF Nationals, IPF Nationals, the World Cup, and the WPO semifinals and finals at the Arnold Classic not to mention the WPO Bash for Cash, and I never see these guys. But I know for a fact that the great lifters at these meets would never give them a second look. After all, what have they done? Until the end of time, people will seek out a way to win. That's human nature. Why not use what's available? Most use computers today, not an ink quill. I read a lot and suggest to you a book—*A Sport's Odyssey* by Dr. Judd Biasiotto (2001). It has been advertised in *Powerlifting USA*. As you know, Dr. Judd is opposed to modern lifting gear, and his opinion on drug use is the same. His goal was to total 1400 at 132. You can read how he used hypnosis, biofeedback, mind control, and just about everything a cybernetics lab can offer. He was a man of positive thinking. See how long his power career lasted. And, oh yes, how that quest for a 1400 total turned out. He eventually squatted 603 at an AD-FPA meet in 1989. If hypnosis works that well, give me two bottles of it. I invite Dr. Judd to Westside to see what modern lifting is like.

How to Use Bench Press Shirt

There's always a lot of talk today about the bench shirt. In the beginning, everyone welcomed it on the scene. Unfortunately, bench shirts provided only a small increase over one's raw bench record. That was the 1980s. In the late 1990s, shirts became much stronger. As the shirts got better, the bench records started to move up little by little. Working with Inzer Advance Designs, Kenny Patterson helped refine the denim shirt. They developed the radical cut shirt. The records then started going up and up. Todd Brock had a 480 bench and was stuck. After wearing an Inzer radical cut shirt, he skyrocketed to 540 in the same weight class. Then Phil Guarino had the insight to cut the back of the shirt, making it an opened back version. What an innovation that was. I helped him warm up at the Bash for Cash, one of Kieran Kidder's meets in Daytona some years ago. After Phil warmed up, he amazed me with a 661. I knew he had a great idea. Vanessa Schwenker, a 132-lb woman, had a 260 bench. We went to a bench meet and somehow the back of her shirt tore completely. She didn't have a backup shirt and had to use the torn one. She benched 290, a PR. We felt lucky. When she got back home, she had the shirt sewn back together, but meet after meet, she never made more than 260. She eventually retired, and it wasn't until a year later that we realized it was the open backed shirt that increased her bench.

Now, we know that the open backed shirts are the best. Just look at the big money meets and see what they're wearing. Looking back, I am amazed how Phil mastered that shirt. Like a fast race car, these shirts are hard to master. I took Todd for a ride in my 1960 corvette, and it made him sick. At the time, the car went 10.70 seconds in the quarter mile with about 475 horsepower. It seemed faster but not for long. I got bored and added nitrous to the 355 Chevy. It went 9.40 in the quarter mile with 800 hp. Again, that seemed slow to me so I put a 404 motor in and soon made an 8.60 pass. My reflexes were matching the car's horsepower, now about 1000. You guessed it. I got bored again. So a 598 on nitrous was added. It went 7.90, 175 mph. So what's the point of all of this?

Had I started with a 7.9 car, I would be dead, and Todd would be real sick. My reflexes would not have matched the strength of the car. That same thing happens with lifters. They try shirts much stronger than they are. Oh yes, and there are people who think the shirt is doing everything. They're wrong. At Westside, we have held the all-time best in the bench at 132, 198, 220, 242, 275, and 308 at one time or another. Why don't the rest of us put on their shirts and bench the same? We were not strong enough. You've got to have the right size bait for a particular size fish. The same is true for bench shirts. How do you master a bench shirt? Most lifters don't know how to use one correctly.

Dan Cummings visited from Iowa and trained with Becca Swanson. He stayed a week. His best was 600. On max effort day, I saw him work out, and I felt he was closer to a 700 bench. He disagreed with me. The next workout, we worked with him, and in a span of 45 minutes, he made 665. Not bad, huh? I did a seminar in Tennessee for my good friends Tony Hutson and Brent Tracy. We worked with eight guys and seven got new PRs. Here's how we did it using Brent's workouts as an example.

Brent's best was 528 at 198. First, he warmed up to 315 off his chest. Next, with the 4-board press, he did 365x1, 405x1, and 455x1 without a shirt. Then, he did a 3-board press with his shirt with 495x1. Then, he did a 2-board press with 515x1. Next, he did 530 off his chest and then

545 off his chest for a second PR. I know this all sounds too good to be true, but it's true. The trick is each time you go to 4-boards, raise your head and lower the bar as far down your torso as possible. With 3-boards, raise your head and shoulders if necessary in order to touch the board and go even lower down your torso. With 2-boards, raise your head and start lowering the bar as low as possible by rolling the shoulders up like a sit-up. Each time you go to fewer boards, pull the shirt a little lower off the shoulders. This, of course, makes the shirt a bit stronger. As you increase the weight, raise your head and shoulders and keep your eyes on the bar until it touches the chest. This enables you to touch the chest with a lighter weight than thought possible and at the same time lift a lot more weight. Now that the secret's out, we're all even, right? I just told you how to kick our ass. If you don't do it, it's your problem, fool.

At the 2003 Arnold Classic, Fred Boldt warmed up as I just described. He did 405 off his chest, skipped the 4-boards, put on a shirt, and did 495 on 3-boards. Then he did 530 on two boards and went on to the stage and did a 540 opener. He did 551 on his second attempt. After Markus Schick made a 567 world record, Fred took 1 kg more and pressed it only to have it turned down for a technicality. Not bad for a 165 who is 5ft 9in tall, benching in front of a crowd of thousands. I hope this information helps you break your bench record and have a better understanding of how to use legal equipment.

Coaching Equipment – The Tendo Unit

Have you ever wondered how you measure up to other athletes or lifters? Are you quick with light loads? What about heavy loads? How explosive are you when jumping or bounding? These are just a few very important questions that need to be addressed. Let's look at a device that can do just that. It's the Tendo velocity measuring device. It measures the speed of a lift in meters per second or the actual wattage produced by an athlete. For sprinting, you can determine the quickness of the athlete. Quickness is the ability to perform high speed movements with no significant external resistance or great energy, meaning simply how fast one reacts to a stimulus. Some drills for sprinting are one leg bounding for either stride length or frequency, bounding over hurdles, box jumping, or plyometrics. By attaching the Tendo unit to the athlete, the speed being developed can be measured. The Tendo unit can also measure the velocity with which one throws a medicine ball of different weights. While beginners will gain explosive strength as well as maximal strength from jumping, the same exercises will not produce the same results for the advanced athlete. Barbells must now be incorporated into the training.

The Tendo unit can be attached to a bar to measure how fast one can move a light weight for speed-strength and near maximal weights as well. By using a determined amount of rubber bands on the bar, one can regulate the bar speed to simulate explosive speed or even strength-speed work. The more bands used, the slower the bar speed becomes, representing near maximal or maximal loading. If you do not become faster, you will not become stronger. Also, if you do not become stronger, you will cease to become faster. The Tendo unit can determine this. When the yearly plan calls for a general preparation microcycle or a sport-specific microcycle with different activities or weights plus jumping, the Tendo unit can help log important data from month to month or year to year. It can help determine how many jumps per set or the total volume of jumps

for the optimal jump loading. This could provide valuable information to the coach and athlete. The Tendo unit can regulate the intensity zone at which an athlete can best perform as well as when to wave into a different loading zone. Training is individual. Introverts need a slower pace of exercise whereas extroverts require more stimulation, or more exercises of variable intensity. The Tendo unit could dictate when it's time to switch exercises.

Many times exercises are performed in a fatigued state to simulate a contest environment. The Tendo unit could be used to regulate the amount of sets or reps before a decreased training value distorts progress. The Tendo device can be used by hockey players when hitting a regular or heavier puck or to determine what weight is optimal for a baseball player's bat. It could be used for all types of strength development, not only for vertical but also for lateral movement. A shot putter can track his or her speed with the Tendo unit with shots ranging from 7–12 kg. A hammer thrower can be tested with short, standard, and long wires to determine his quickness with each. This would tell the coach which types of strength the athlete needs improvement on. In powerlifting or weightlifting, top velocity while lifting weights is essential, especially with the five classical lifts. The amount of weight will determine just how fast the particular load moves.

The Tendo unit can measure the speed of any load up to 100% max lifts. Does an individual lifter squat 700 lbs mostly by speed-strength or strength-speed? This can be determined by doing squats with a high percentage of bands, roughly 65% with 35% bar weight. This type of squat is very slow, allowing for no momentum. This produces strength-speed. For speed-strength, 40% of the total weight is bar and plates. At the top, bands add 25%, making the top weight 65% of a 1RM. At the bottom, the band tension adds 10% to the bar thereby making the weight at the bottom 50%. The bands accommodate resistance. They reduce the deceleration phase of the barbell. Remember, any motion that has acceleration also has a deceleration phase. While pressing, pulling, or squatting, the acceleration of the bar depends on the net force acting on the bar. This changes as external resistance is increased or decreased. With the Tendo unit, the bar velocity can be checked at any bar speed, whether for speed-strength, strength-speed, or near maximal weights of 90–97% of a 1RM.

The Tendo unit is used primarily to control bar speed for the development of special strengths. As an experiment in the bench, Karen Sizemore, an official 450 bencher, was tested with a variety of weights. Her power output was measured with each weight:

Weight (lbs)	Power output (watts)
45	270
95	379
135	474
145	453
155	459

Karen's normal training weight was 135 for nine sets of three reps. As you can see, 135 lbs resulted in the highest power production. A band was attached to Karen's bar to add 45 extra lbs at the chest to equal 180 lbs. The bands added an additional 85 lbs at the top to equal 220 at lockout. The Tendo unit proved we were using the correct weight for her speed work.



What if you want to raise a training weight for speed-strength? Fred Boldt has made official benches of 450, 480, and 495 at 165. His bar speed was 68–72 meters/second with 185. We raised his training weight to 195. Fred's bar velocity remained the same, which produced an official 540 bench at 163. Without the Tendo unit, we could only guess as to what weight to use as his strength was

raised. Fred also used the same band tension as Karen. It may be surprising to many, but if you look only at Karen's chart, you can see that weights can be too light or, of course, too heavy to produce much force. The Tendo unit has many applications in sport. Sometimes what appears to be the truth is not.

At Westside, we do many lifts in the lightened method to increase speed. In track, the athlete runs down a track inclined four degrees or runs while being pulled back by an elastic cord. A rower can row a lighter boat. Throwers can use lighter shots, hammers, or disks. All of these movements can be measured by the Tendo unit. Training is based on a particular sport but must be controlled individually by the athlete. These are just some applications that the coach or athlete can use to determine optimal training loads to increase progress. It works while doing general, directed, or sport-specific exercises, which highly trained athletes must do year round. The Tendo unit is a great tool for anyone whose goal is to reach the top.

Gym Equipment

There are franchises, and there are gyms. Westside Barbell is definitely a gym. What's the difference? A franchise is a place where they sell baggy pants, T-shirts, protein powder, and a whole bunch of junk you don't need. You can't make noise (don't even think about cursing), and chalk is forbidden. They have lots of mirrors (all you weirdo's who look in them for hours...you know who you are) and bodybuilding magazines featuring lots of girls and lots of bull. So what does a gym have that's so important?

First, someone must be able to instruct the team and teach others to do the same. This coach must know proper technique in not only the three competitive lifts but also the special core exercises for all three lifts in addition to assistant exercises. He must be able to recognize why a lifter may have a form problem. Is it a mental mistake or a lack of strength in a particular muscle group? Or is the lifter emotionally not up to the task of handling the load? What exercises would help a lifter overcome a plateau? Can he recognize different personalities? An introvert can survive on less exercise and is easily satisfied with even mediocre equipment. This person

may not even need reading material. An extrovert, on the other hand, will always seek out more exercises and books, always asking how to be better. If the lifter is timid about taking new weights or fails at meets, does the coach know how this can be fixed?

Second, the entire gym must always strive to improve at meets as well as in the gym. In other words, there must be rivalries within the gym at all times. On one Friday, Paul Childress was visiting and squatted with Chuck Vogelpohl and Mike Ruggiera. What a sight it was to see three 1000-lb squatters going at it together. The following week, there were six 275s squatting in the morning group, the weakest one with a 2100 total. Talk about pecking order. No one is the king at Westside at least for very long. That keeps everyone on their toes and working hard. If someone has a bad attitude, he or she must go. Everyone can't be a world champ. If someone looks down on the other lifters or won't go to meets to help his teammates, kick him to the curb. One bad attitude can destroy a gym. Everyone must believe in the system no matter what it is. Teamwork is essential. This could mean pushing your training partner or letting him know he is slacking off. He may not like it, but you have to tell him. At Westside, treat me as an equal (i.e. I get no respect). A new lifter came to the gym and was going to load my plates for me. I asked him if he respected me in the gym. He said he did. I then told him that if he ever respected me in the gym again, I would kick him out. From that day on, he treated me like everyone else.

My job is to bring a new guy in the gym and then try to run him out by pushing him to the limit. The morning crew, with whom I train, are always trying to kill me, pushing me to the limit every workout. This is how it should be.

Third, what equipment does a gym need? You should have chains and jump stretch bands for squatting and benching plus a deadlift platform for the bands. If you can afford it, the gym should have a Monolift. Don't buy junk. If your budget is low, obtain a power rack with one-inch hole spacing for deadlift and bench lockouts. It is a must. As far as bars, every gym should have a bench bar, a squat bar, and a deadlift bar. It also needs a good, solid bench. At Westside Barbell, we always bench inside power racks. Depending on your budget, a safety squat bar, MantaRay, and a couple of different cambered bars really make training more versatile. I believe every gym should have a pulling sled. It will make your posterior chain stronger as well as build GPP. For sports, it will help prevent hip, ankle, and knee injuries. It is also great for the upper body when pulled with the arms. We do a lot of work on our stationary sled. This is a resistance sled much like a dog slat mill used for conditioning dogs, but it has attachments that work like pulling a weighted sled. Bands fit around the ankles, which builds the hip extensors and flexors.

Jason Burns, an ex-Cincinnati Bengal, said that had he used this sled, he would probably still be playing. Westside also has dumbbells up to 175, a stability ball, sturdy boxes for box squatting, and platforms for deadlifting. If you are interested in increasing the squat and deadlift, a calf/ham/glute bench is needed.

At Westside, we live on calf/ham/glute raises and inverse curls. They will push your squat and deadlift up fast. As long as you regulate the weights and reps, they will continue to raise both the squat and deadlift indefinitely. An exercise that has benefited Westside greatly is the land mine. Wrestlers have done this exercise forever. A bar is placed in the corner. The lifter picks it up and twists it left and right. This works the obliques, abs, and low back. The combination of the land mine and roller reverse hyper machine has brought about an increase in the deadlifts recently at Westside. We also have an assortment of rowing handles.



I believe the calf/ham/glute, the land mine, and reverse hyper machine are essential for any hardcore gym. The roller model of the reverse hyper machine isolates the lower back like nothing I have ever seen. When the weight is under your face, the sacrum is rotated maximally. At the same time, it works as restoration by tractioning the back. The reverse hyper machine out-performs Romanian deadlifts almost two to one for low back and hamstrings, as tested by EMG. Although the glutes were not tested in the study, they are hit hard by the machine. Some people report a 100-lb gain in the deadlift and squat from using this machine. However, it's the restoration that the reverse hyper provides that makes the difference. If you want to be successful, combine the old and the new—wisdom and innovation.

Attitude. Everyone must have the same goal, which is to get stronger. We don't care if you are trying a 300 bench press for a PR or a 600 PR. And what about equipment? Machines are a waste. They work on the theory of peak contraction, which simply means you must start at your weakest point. This is stupid and very dangerous. Machines build no stability. Also, how can one machine work for two people if one is strong at the bottom of a lift and his partner is strongest at the top? It's impossible.

I want to say something here about high intensity training (HIT). Many football teams are using the HIT system. Well, my friends, intensity isn't a feeling but rather a division of "percent

of a one rep max” zones. Doing one set to failure does little for speed-strength. If you have a player do 20 reps with a barbell to complete failure, how long does it take him to do a second set? Under 35 seconds, I hope, because that’s how long a football player gets to rest between plays. I was talking to an NFL strength coach recently who said that college programs using HIT are sending him linemen that can’t vertical jump 19 inches or squat 300 lbs! Chuck Vogelpohl’s brother, who trains with us, is a center and weighs 305 at 20-years-old. He has a vertical jump of 31 inches.

What does a gym need for bench pressing? First, it needs a power rack with pin holes every two inches on center or one inch on center if possible, like ours, for doing rack lockouts. If the hole spacing is greater than two inches, the weight reduction necessary between using one set of holes and the next is too great to work within our strength curve. For board presses, a gym needs 2-, 3-, and 4-boards glued or nailed together. Doing a board press is not the same thing as doing a rack press. When doing a rack press, the contact is only with the hands. When board pressing, the weight is transferred through the boards into your chest, shoulders, and arms. Heavy dumbbells are necessary. If you want to bench more than 600, you need dumbbells up to at least 175. If you want reversal strength and who doesn’t, the contrast method is a must. For example, sleds and parachutes, which sprinters use, that break away while running help create the over-speed effect.

Explosive and accelerating strength can be developed with the aid of weight strippers or the release device. By lowering extra weight on the releasers and then concentrically raising a lesser load, explosive strength can be increased. By using chains that are connected to the bar, we can create a deloading effect on the eccentric phase through the chains piling on the floor. This process exactly duplicates the strength curve as it relates to the bottom of the lift. Reloading



of the chains concentrically again helps to maximize the complete range of joint motion, thus accommodating resistance very effectively. Flex bands work much like chains in as much as they unload tension upon lowering with a regaining of tension in the concentric phase. A greater amount of reversal strength can be obtained not by lowering a heavier weight, which leads to a decrease in reversal strength, but by a moderate increase in downward velocity. This is kinetic energy, which can be transferred to the storage and reuse of elastic energy, for the concentric phase. This was discussed by Zatsiorsky in *Science and Practice of Strength Training*.

A great piece of equipment is a McDonald cambered bar. If you are an advanced bencher, you may have to place a 2x6 or two, 2x6s on your chest to reduce the stretching from five inches to 2–3 inches. A seven-foot EZ curl bar can also be a great benefit. A set of rings resembling gymnastic rings to do push-ups and pull-ups with from a variety of angles is tremendous for building extra muscle.

For squatting and deadlifting, again weight releasers, chains, and bands should be used extensively on max effort day and speed day. An assortment of boxes to squat off of is vital. Also, a MantaRay, a safety squat bar, and for most powerlifters, a front squat harness are needed to change body leverage artificially.

Don't worry if you are weak on one or all of these devices. On the contrary, this is precisely why they will work for you. For example, Don Damron used the safety squat bar for a mini-cycle and his squat and deadlift jumped about 20 lbs every time. A lifter needs many weapons in his arsenal to increase his or her lifts as well as to prevent boredom. Another bar that we use quite often is the Buffalo Bar by Ironmind. It is very strong and cambered, enabling one to do good mornings easily.

Don't forget to include bands, chains, and weight releasers to affect your leverage in different ways. You can use lots of chains and a light bar weight or do just the opposite—a light amount of chain and a heavy bar weight. The Russians did a lot of slow lowering with 80%, taking about six seconds and raising up 60% very explosively with the use of weight releasers. Belt squats are the perfect way to work the lower body without trauma on the spine. They are also very therapeutic. If you suffer from a back injury, you can still build your lower body with belt squats. This exercise can realign the vertebrae by its traction properties.

A glute ham bench is an absolute must. The hamstring is the muscle group that can make or break your squat and deadlift progress. Five women at Westside have squatted or deadlifted 500 pounds or more, and every one of them laid a heavy foundation on a glute ham machine. Doris Simmons made a 341 squat and 349 deadlift at 105 a long time ago, and Amy Weisberger has moved her numbers from a 445 squat and 430 deadlift at 123 to 590 and 500 at 148.

A reverse hyper will build your glutes, hamstrings, and lower back like nothing else. There are many men who merely increase the weight on this exercise near a meet. Billy Masters, who squats 900 lbs, does just that. The reverse hyper is very therapeutic for the low back because it rotates the sacrum on each rep.

A pulling sled will do unbelievable things for your squat and deadlift. Jim Voronin was stuck at a 683 deadlift forever. We advised him to stop deadlifting and start dragging a weighted sled. In four months, he did a 750 deadlift!

WESTSIDE BARBELL STATISTICS

These are the numbers our lifters have achieved up-to-date. All lifts were performed in sanctioned contests conditions, and most of them are in the APF, WPO, and IPA. This list is under everlasting construction. The numbers are from August 2007 and have already expired in some part at the time of this book's publication.



ELITE MEMBERS

TOP 10 TOTALS						
Rank	Last Name	First Name	Total	Weight Class	Body Weight	Coefficient
1	Panora	Greg	2600	242	242	1395.68
2	Vogelpohl	Chuck	2606	275	264	1372.8
3	Smith	Matt	2672	shw	369	1308
4	Stafford	John	2502	275	274	1305.29
5	Vogelpohl	Chuck	2319	220	220	1284.72
6	Bolognone	Tony	2540	308	305	1283.9
7	Alhazov	Vlad	2545	SHW	341	1277
8	Bayles	Joe	2374	242	239	1274.18
9	Holdsworth	J.L.	2436	275	274	1270.86
10	Brown	Mike	2518	308	308	1267.5

TOP 10 SQUATS						
Rank	Last Name	first	Total	wt class	body wt	Coefficient
1	Vogelpohl	Chuck	1150	275	264	606.4
2	Alhazov	Vlad	155	SHW	341	579.5
3	Vogelpohl	Chuck	1025	220	220	567.8
4	Panora	Greg	1050	242	242	563.64
5	Harrington	Phil	905	181	181	560.46
6	Smith	Matt	1160	shw	shw	548.3
6	Brown	Mike	1074	308	308	540.6
7	Harrington	Phil	915	198	197	538.5
8	Wenning	Matt	1055	308	296	538
10	Bolognone	Tony	1050	308	305	530.7

TOP 10 BENCH						
Rank	Last Name	First Name	Total	Weight Class	Body Weight	Coefficient
1	Fry	Jason	683	181	180	422.9
2	Wolfe	Mike	859	shw	342	418.6
3	Halbert	George	766	242	241	411.88
4	Halbert	George	733	220	215	410.3
5	Fry	Jason	685	198	192	407.9
6	Boldt	Fred	655	181	181	405.6
7	Panora	Greg	750	242	242	402.6
8	Holdsworth	JL	775	308	284	400
9	Halbert	George	683	198	198	399.8
10	Bolognone	Tony	780	308	305	394.2

TOP TEN DEADLIFTS						
Rank	Last Name	First Name	Total	Wt Class	Body Weight	Coefficient
1	Vogelpohl	Chuck	816	220	220	452.06
2	Vogelpohl	Chuck	835	275	265	439.62
3	Heath	Doug	540	132	132.3	438.9
4	Chorpenning	Jeff	750	198	198.5	438.8
5	Vogelpohl	Chuck	805	242	234	437.03
6	Stafford	John	832	275	275	434.05
7	Heath	Doug	457	114	114.5	434.8
8	Panora	Greg	800	242	238	431.8
9	Berardinelli	Angelo	640	165	165.3	425.3
10	Meyers	jeremiah	805	275	275	419.01

48 Members total 2000 or more

2600 CLUB				
Rank	Last Name	First	Lift	Wt Class
1	Smith	Matt	2672	SHW
2	Vogelpohl	Chuck	2605	275
2	Panora	Greg	2600	242

2500 CLUB				
Rank	Last Name	First	Lift	Wt Class
1	Harold	Tim	2560	SHW
2	ALHAZOV	Vlad	2545	SHW
3	Bolognone	Tony	2540	308
4	Brown	Mike	2518	308
5	Ruggiera	Mike	2510	shw
6	Stafford	John	2502	275

2400 CLUB				
Rank	Last Name	First	Lift	Wt Class
1	Wenning	Matt	2465	308
2	Holdsworth	J.L	2437	275
3	Cole	Zack	2425	275
4	Myers	Jeremy	2400	275

2300 CLUB				
Rank	Last Name	First	Lift	Wt Class
1	Bayles	Joe	2375	242
2	Wendler	Jim	2375	275
3	Fusner	Rob	2357	308
4	Gutridge	Josh	2325	SHW
5	Hudak	Zack	2303	275
6	Dimel	Matt	2300	SHW

2200 club				
Rank	Last Name	First	Lift	Wt Class
1	Lenigar	Matt	2295	308
2	Hoff	Dave	2290	275
3	Waddle	Tom	2260	308
4	Henery	Andre	2225	SHW
5	Nutter	Shawn	2210	242
6	Obradovic	Jerry	2210	275
7	Tate	Dave	2205	308
8	Ritchey	Jimmy	2200	275

2100 CLUB				
Rank	Last Name	First	Lift	Wt Class
1	Ramsey	Will	2155	308
2	Johnson	Nate	2140	275
3	Smith	Matt (2)	2125	275
4	Patterson	Kenny	2115	220
5	Brock	Todd	2115	275
6	Beach	Tony	2105	308
7	Mendoza	Phil	2105	SHW
8	Harrington	Phil	2100	198
9	Simmons	Louie	2100	242

2000 CLUB				
Rank	Last Name	First	Lift	Wt Class
1	McCoy	Joe	2090	220
2	Paulucci	Tom	2080	275
3	Willoughby	Jerry	2070	SHW
4	Hayes	Bill	2060	SHW
5	Chorpenning	Jeff	2050	198
6	Burrows	Mark	2050	242
7	Moore	Bill	2045	SHW

8	Forby	Tim	2035	308
9	Guttridge	Josh	2035	SHW
10	Amato	Joe	2033	275
11	Cole	Zach	2030	275
12	Reitter	Gabe	2020	242
13	Youngs	Bob	2010	275
14	Johnson	Nate	2005	275
15	Kelly	Brian	2000	220
16	Thomasson	Eskil	2000	242
17	Conkley	James	2000	275

Westside Barbell Total Sheets

50 MEMBERS SQUAT 800 OR MORE

1000 CLUB

Rank	Last Name	First	Lift	Wt class
1	Smith	Matt	1160	SHW
2	Alvazov	Vlad	1155	SHW
3	Vogelpohl	Chuck	1150	275
4	Brown	Mike	1074	308
5	Wenning	Matt	1055	275
6	Panora	Greg	1050	242
7	Bolognone	Tony	1050	308
8	Ruggiera	Mike	1050	348
9	Cole	Zach	1030	308
10	Dimel	Matt	1010	SHW
11	Harold	Tim	1005	SHW
12	Wendler	Jim	1000	275

900 CLUB

Rank	Last Name	First	Lift	Wt class
1	Hoff	David	960	275
2	Meyers	Jeremiah	950	275
3	Waddle	Tom	950	308
4	Stafford	John	946	275
5	Tate	Dave	935	308
6	Bayles	Joe	925	242
7	Simmons	Louie	920	242
8	Henry	Andre	920	SHW
9	Harrington	Phil	915	198
10	Fusner	Rob	905	308
11	Holdsworth	JL	903	275
12	Hudak	Zack	903	275
13	Nutter	Shawn	900	242
14	Ramsey	Will	900	308
15	Lenigar	Matt	840	308
16	Guttridge	Josh	900	shw

800 Club

Rank	Last Name	First	Lift	Wt class
1	Mendoza	Phil	881	SHW
2	Ritchey	Jimmy	875	275
3	Burrows	Mark	875	275
4	Amato	Joe	865	275
5	Smith	Matt (2)	850	242
6	Brock	Todd	850	275
7	Willoughby	Jerry	850	SHW
8	Thomasson	Eskil	840	242
9	Youngs	Bob	840	308
10	Beach	Tony	830	308
11	McCoy	Joe	825	220
12	Patterson	Kenny	821	220
13	Reitter	Gabe	820	242
14	Hayes	Bill	815	SHW

15	Hawkins	Matt	810	220
16	Obradovic	Jerry	810	275
17	Forby	Tim	810	308
18	Moore	Bill	805	SHW
19	Chorpenning	Jeff	804	198
20	Coleman	Arnold	804	198
21	Trotter	Rick	800	242
22	Johnson	Nate	800	275
23	Snyder	John	800	275
24	Damron	Don	800	308

Westside Barbell Total Sheets

71 MEMBERS BENCH 550 OR MORE

Rank	Last Name	First	Lift	Wt Class
1	Wolfe	Mike	860	shw

700 club

Rank	Last Name	First	Lift	Wt Class
1	Bolognone	Tony	780	308
2	Holdsworth	JL	775	308
3	Halbert	George	766	241
4	Keyes	Paul	755	308
5	Panora	Greg	750	242
6	Matinez	John	750	308
7	Fletcher	Travis	750	SHW
8	Smith	Matt	749	SHW
9	Stafford	John	738	275
10	Fusner	Rob	735	308
11	Brown	Mike	735	308
12	Patterson	Kenny	728	275
13	Wenning	Matt	725	308
14	Gutridge	Josh	725	SHW
15	Argabright	Kevin	720	SHW
16	Harold	Tim	715	SHW
17	Blakely	J.M.	710	308
18	Bayles	Joe	705	242
19	Obradovic	Jerry	705	275
20	Viclery	Scott	700	SHW
21	Myers	Jeremiah		
21	Welch	Drex	700	308
22	Winters	Nick	700	SHW

650 club

Rank	Last Name	First	Lift	Wt Class
1	Fry	Jason	685	198
2	Senter	Marlon	675	220
3	Cole	Zack	675	275
4	Wendler	Jim	675	275
5	Ruggiera	Mike	675	348
6	Hudak	Zack	661	275
7	Hoff	Daivd	661	275
8	Mann	Roger	660	242
9	Richie	Jimmy	660	275
10	Lenigar	Matt	660	308
11	Boldt	Fred	655	181
12	Conkley	James	650	275
13	Tate	Mickey	650	308

600 club

Rank	Last Name	First	Lift	Wt Class
1	Kelly	Brian	640	220
2	Ramsey	will	639	308
3	Vogelpohl	Chuck	635	275

4	Bell	Travis	630	220
5	Beversdorf	Dave	625	275
6	Brock	Todd	620	275
7	Burrows	Mark	615	242
8	Adams	Jeff	605	220
9	Swanger	Adam	605	242
10	Nutter	Shawn	605	242
11	Johnson	Nate	605	275
12	Ramsey	Will	605	308
13	Tate	Dave	605	308
14	Henry	Andre	605	SHW
15		Seth	600	220
16	Swauger	Adam	600	220
17	Kelly	Brian	600	220
18	Shortland	Chad	600	242
19	Simmons	Louie	600	275
20	Beach	Tony	600	275
21	Hoff	Aaron	600	275
22	Forby	Tim	600	308
23	Boggia	Bart	600	SHW

550 club

Rank	Last Name	First	Lift	Wt Class
1	Burrows	Mark	580	220
2	Danison	Jim	575	242
3	Smith (2)	Matt	575	242
4	Dimel	Matt	575	SHW
5	Herron	Dennis	570	SHW
6	Harrington	Phil	570	198
7	McCoy	Joe	565	220
8	Krulick	Mike	560	275
9	Schwenker	Jerry	556	198
10	Jester	Joe	555	198
11	Ramos	Tony	555	198
12	Damron	Don	555	308
13	Waddle	Tom	551	308
14	Reitter	Gabe	550	242
15	Thomasson	Eskil	550	275
16	Mendoza	Phil	550	SHW

Westside Barbell Total Sheets

13 MEMBERS DEAD LIFT 800 OR MORE

800 CLUB

Rank	Last Name	First Name	Lift	Weight Class
1	Harold	Tim	855	SHW
2	Smith	Matt	850	SHW
3	Vogelpohl	Chuck	835	275
4	Stafford	John	832	275
5	Dimel	Matt	821	SHW
6	Ruggiera	Mike	821	SHW
7	Vogelpohl	Chuck	820	275
8	Obradovic	Jerry	810	308
9	Harold	Tim	810	SHW
10	Alhazov	Vlad	805	SHW
11	Meyers	Jeremiah	805	275
12	Holdsworth	JL	804	275
13	Brown	Mike	804	308
14	Panora	Greg	800	242
15	Paulucci	Tom	800	275

Westside Barbell ELITE MEMBERS

	listed alphabetically	66 members
Adams, Jeff	Jester Joe	Reitter, Gabe
Amato, Joe	Harrold Tim	Richie, Jimmy
Arnold-Tate, Traci	Halbert, George	Sanger, Gary
Beach, Tony	Heath, Doug	Schwenker, Venessa
Benford, Garry	Henery, Andre	Seitzer, Jim
Beversdorf, Dave	Holdsworth, J.L.	Seitzer, Kathy
Blankenship, Danny	Liggett, Mariah	Shortland, Chad
Bolognone, Tony	Lozcangee, Pascale	Simmons, Doris
Brock, Todd	Maynard, Ron	Simmons, Louie
Burrows, Mark	Marnelli, Marc	Sizemore, Karen
Chorpenning, Jeff	McCoy, Joe	Smith, Matt
Cole, Zach	McDonald, Shawn	Sorenson, Deb
Coleman, Arnold	Meany, Sue	Stafford, John
Crisp, Pam	Mendoza, Phil	Tate, Dave
Damron, Don	Milan, Corey	Thomasson, Eskil
Dillinger, Lisa	Moore, Bill	Vogelpohl, Chuck
Dimel, Matt	Myers, Jeremy	Waddle, Tom
Dodd, Laura	Nutter, Sean	Weisberger, Amy
Faye, Terry	Obradovic, Jerry	White, Sue
Fusner, Rob	Panora, Greg	Whittaker, Bill
Forbasona Tim	Patterson, Kenny	Willoughby, Jerry
Gutridge, Josh	Paulucci, Tom	Youngs, Bob
	Ramos, Tony	

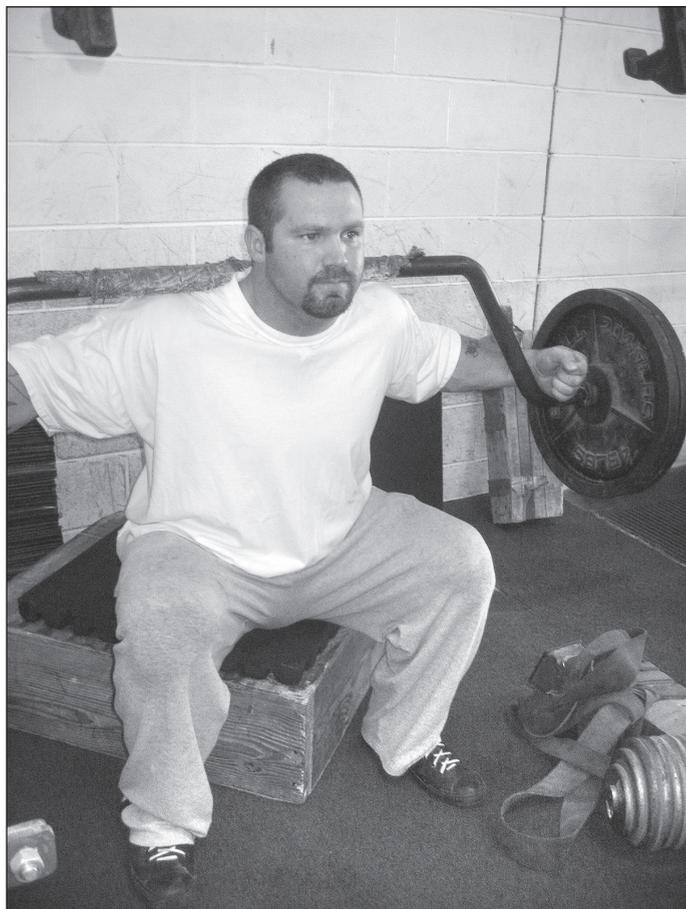
Westside Exercise Index

These sample lists show how much variation there is and the possibilities that exist to change your training based on your needs. Many exercises can be mixed together such as board presses with bands, chains, or both.

Variation is one of the most important keys to constant progress. Without that, your lifts will stall or even regress. The most common way to change your training is to change the max effort exercise each week. Variation can be used for speed in waves for each power lift. It has brought great results at Westside.

Westside Squat and Deadlift Exercise Index:

Good morning styles:



- regular
- bent over
- arched back
- standing on ramp
- from chains (concentric)
- foot stance

Box squat styles:

- low box
- high box
- soft box (hassock or foam)
- foot stance
- from chains (concentric)

Resistance variables on squats and good mornings:

- chains
- reverse band
- bands from floor
- bands and chains together
- straight weight
- weight releasers

Different bars and tools to use on squats and good mornings:

- straight bar
- cambered squat bar
- safety squat bar
- buffalo bar
- MantaRay
- Dave Drapers top squat
- front squat harness

Deadlift styles:

- regular
- box or platform
- sumo
- conventional
- rack pulls
- snatch grip
- hack deadlifts

Resistance variables on deadlift:

- chains
- reverse band
- band platform
- straight weight





Different bars to use on deadlift:

- deadlift bar
- standard power bar
- thick bars, squat bar, Apollo's axle
- trap bar

Westside Bench Press Exercise Index

Floor press:

- chains
- bands
- reverse bands
- football bar
- fat bar

Board press:

- 1-, 2-, 3-boards
- 3-, 4-, 5-boards
- chains
- bands
- fat bar

Regular bench press:

- chains
- bands
- reverse bands
- all special bars
- incline
- decline

Repetition work:

- dumbbells
- arch bar
- football bar
- buffalo bar
- incline
- decline
- floor
- stability ball

Resistance variables on the bench:

- chains
- reverse band
- bands from floor
- bands and chains together
- straight weight
- weight releasers

Different bars and tools to use on the bench press:

- straight bar
- cambered bar
- freak bar
- buffalo bar
- football bar
- fat bars
- foam
- stability ball

The number of exercises comes up to the hundreds at least, depending on how much variation and how many tools you have in your gym. Choose exercises based on your weak points or sticking points, lack of speed on big weights, ability to use equipment, or anything else that may hold your progress back. Pick right and your progress will be constant.

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