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**Schedule of Events:** Competition opens Saturday, June 28th at 10:00 a.m. for the 114, 123 and 132 lb. weight classes. After a brief intermission lifting will continue at 3:00 p.m. for the 148, 165 and 181 lb. weight classes.

Sunday, June 29th at 9:00 a.m., competition will begin for the 198 and 220 lb. weight classes. Following the intermission lifting will continue at 2:00 p.m. for the 242, 275 lb. classes and the super-heavy weights. (Please Note: the Round System will be in effect for the squat and bench lifts only, while the deadlift will be conducted in standard rotation.)

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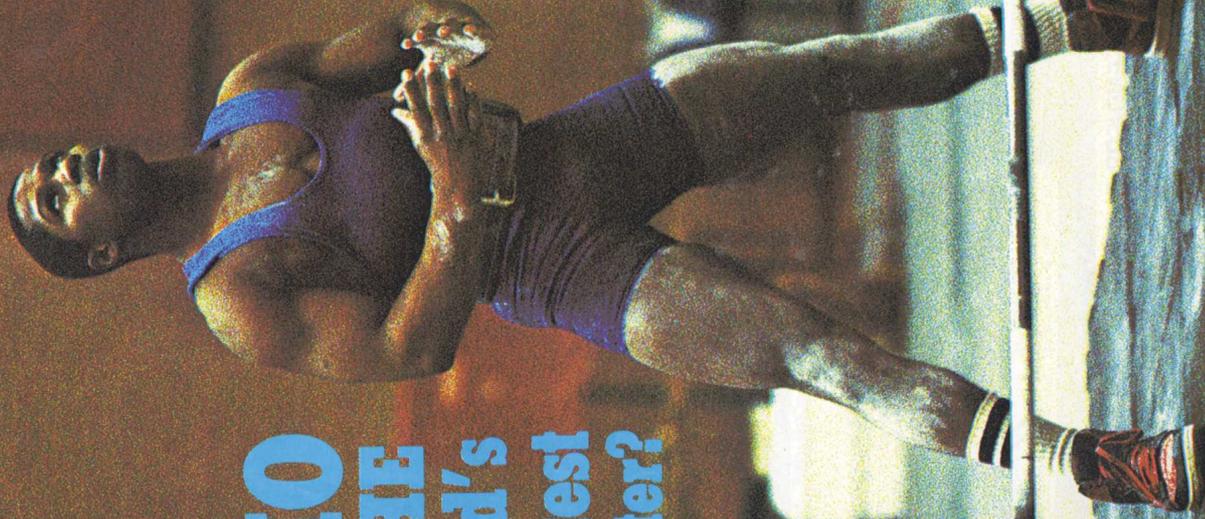
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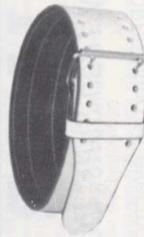
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ON THE COVER...ADFFA National Collegiate Champ Dar-ryl Glenn, of the United States Air Force Academy Team.

NEXT MONTH...coverage of the one of the greatest Powerlifting events in the world...the Hawaii Invitational

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# Who Is The World's

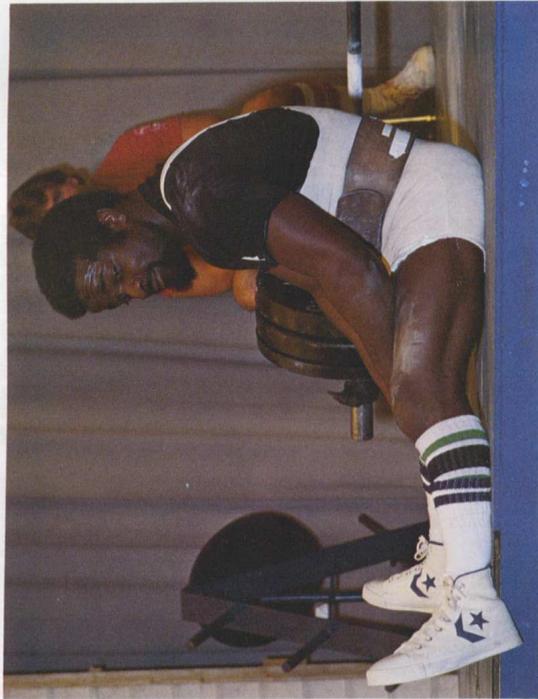
**DR. FRED HATFIELD, himself known throughout the world as "DR. SQUAT", has some interesting observations and what may be a surprising conclusion in his answer to this question.**

If Babe Ruth, called today he'd probably not be called the Sultan of Swat, because over the years that particular shibboleth has changed form somewhat, and no longer belongs to baseball. It's a powerlifting term, and it now reads "Sultan of Squat."

In all the world, there is only one true Sultan of Squat. It is the man who squats the most, while being judged according to the rules of international competition. The current Sultan is Lee Moran. He, and only he, has come out of a deep hole with over 1000 pounds on his 5 foot 7 inch frame, while being scrutinized for rule infractions by international referees. He did it in July, 1984 in Dayton during the U.S. Senior National Powerlifting Championships.

That he did it at all is nothing short of an awesome feat of monstrous strength. But the way he did it made him a legend in his own time. I'll tell you that story shortly. First, let's identify other erstwhile Sultans who would contest my proclamation that Lee Moran alone holds the title.

A strong case can (and often is) made for giving each of the record holders in the respective weight divisions their due, and not "belittling" them by giving a major credence to only the biggest of them. Fair enough, if that's where your head's at, but it's the big fellas



**IS THIS MAN THE WORLD'S GREATEST SQUATTER? Joe Bradley never had much trouble with his squats, or the bench press for that matter, but the deadlift occasionally proved a challenge as it did with this lift, which set him on his glutes at the 1980 World Series of Powerlifting meet.**

That he did it at all is nothing short of an awesome feat of monstrous strength. But the way he did it made him a legend in his own time. I'll tell you that story shortly. First, let's identify other erstwhile Sultans who would contest my proclamation that Lee Moran alone holds the title.

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### THE GREATEST SQUATS OF ALL TIME\*

Lifter	Class	World Record	American Record
Joe Cunha	114	534	534
Hideoaki Inaba	123	523	
Joe Cunha	132	650	536
Joe Bradley	148	654	661
Bob Wahl	165	722	
Mike Bridges	181	836	727
Rickey Crain	198	826	836
Fred Hatfield	220	881	859
Ed Coan	242	867	881
Dan Wohleber	275	909	903
Fred Hatfield	275	909	964
Dwayne Foly	SHW	981	
Lee Moran	SHW	1003	1003

\* only squats judged by international referees considered

### SCHWARTZ & POUND FOR POUND RANKINGS

Weight Class	Rank of Lifter	Schwartz Ranking	Lbs. per Lb. Ranking
114	Joe Cunha	# 4	# 2
123	Joe Cunha	# 11	# 6
132	Joe Bradley	# 1	# 1
148	Bob Wahl	# 10	# 4
165	Rickey Crain	# 9	# 5
181	Mike Bridges	# 2	# 3
198	Ed Coan	# 5	# 7
220	Fred Hatfield	# 7	# 8
242	Fred Hatfield	# 8	# 9
275	Fred Hatfield	# 3	# 10
SHW	Lee Moran	# 6	# 11

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242	Fred Hatfield	# 8	# 9
275	Fred Hatfield	# 3	# 10
SHW	Lee Moran	# 6	# 11

# Greatest Squatter?

Perhaps soon, someone will dust off their McIntosh and derive a fair comparison method for each of the individual lifts. Until then, perhaps the only truly objective standard is, as I have said, who lifted the most.

And that was Lee Moran! Let me tell you how he did it. It was at the 1984 Senior National Powerlifting Championships in Dayton, where the squatting duel of the century was to take place. Lee Moran, going head to head with Dave Waddington, the first man ever to squat 1000 pounds. Dave made his historic lift back in June of 1981 at a local meet in Zanesville, Ohio. None of the officials were qualified to judge a world record, so the Wadd's staggering feat never hit the record books.

Lee, it was rumored, was loaded for bear and hungry for the unofficial title, the Sultan of Squat. The Wadd always hangs tough, though, and it promised to be a spectacle the likes of which the sports world had never witnessed before.

The Wadd opened with an immense 942 pounds and missed it on depth. In fact, he missed all his attempts on depth, even a 3rd at 953. Lee, on the other hand, was in the zone. He was man enough to pass through the portal.

Moran backed out of the racks with the same weight Waddington had finished with, 953 lbs. The ponderous weight began to whip up and down, buckling Moran's body. The weight hit the floor with Lee not far behind, however, it decided to take a very ominous path to its resting place, over the top of Lee's skull, nearly ripping the skin of his head off in the process.

Lee Moran's HEROIC BATTLE WITH 1003 POUNDS...on his first go-round with this ponderous poucentage, the right side collar came off, and plates flew off that end of the bar, spilling all over the platform, and then the left side of the bar flipped over to the other side of the platform. Somehow, Lee got his head together after this mind blowing incident and came back to make the weight.



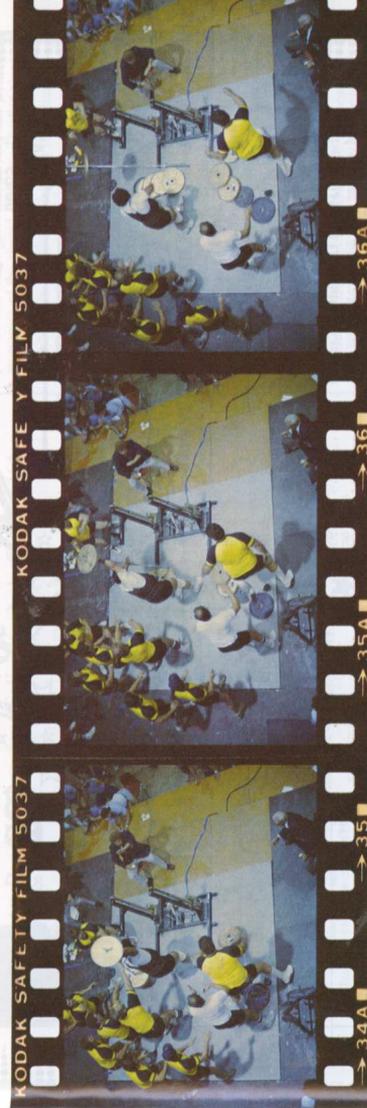
**DR. SQUAT has broken world records in weight classes ranging from 181 (above), 198, 220, 242, to 275 lbs. and recently opened his squats at a contest with 1010 pounds, in an effort to become the heaviest squatter in history, but it was not to be, this time. Perhaps at the Hawaii International?**

will tell you that it's a miracle that he survived, to say nothing of the folk standing in the immediate radius.

Of course, this was not Lee's fault. One of the collars had popped loose from the strain of over 1000 pounds. The officials gave Lee the opportunity to try the lift again. By this time, the crowd - nearly 4,000 strong, was screaming, sweating, and fairly out of their minds while encouraging Lee to buck the lift all time to come. Maybe they wanted to see blood.

It's a fair bet, knowing their disposition. More probably, though, they wanted to see history being made. They wanted to ex-perience the moment of Lee's back like a hickory whip.

Was he dead? No, but witnesses weight mashing their vertebrae.



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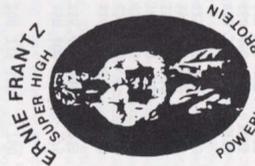
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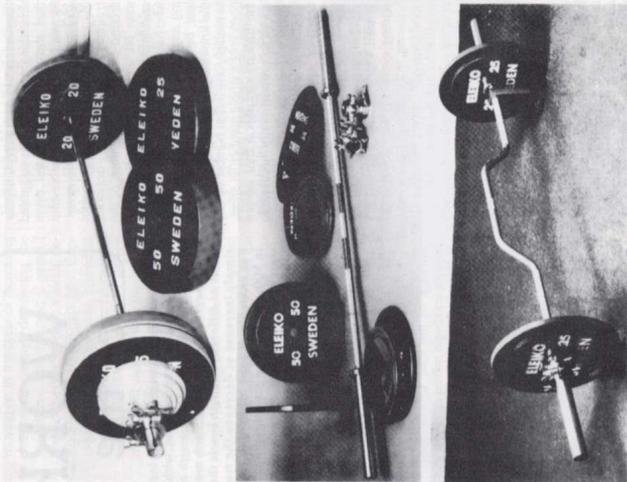
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# INTERVIEW

Let's go, let's go, come on, come on! Let's go Jeff, come on baby, come on! Get it Rodney, you can do it, harder, harder! Here we go, Big Lift! Come on Scott, one more rep, here we go, come on!

This incessant dialogue originates from the most diminutive individual in the weight room. His voice is mingled with the clanging of weights, and the moans of athletes struggling with squats, deadlifts, bench presses, and other exercises. Although most are a head taller than their driving overseer, there is no question as to who is in charge. The voice comes from Dan Austin, 27, a national and world powerlifting champion in the 148 lb. class, and strength coach at Austin Peay State University in Clarksville, Tennessee. Notebook in hand, he prowls the large weight room, jotting down notes on the performances of each athlete, while encouraging, motivating, and demanding. Dan is intense and expects the same from the athletes. They respond with a determination that reflects their respect for their director and a deep pride developing within themselves. The strength, pride, and dedication developed here will carry over to the playing field and certainly contribute to increased individual and team achievement there as well.

## Dan Austin



**MR. INTENSITY.** Dan Austin is a both a successful strength coach and an outstanding strength athlete. plans to enter the Senior Nationals, the Drug Free Nationals, and hopefully qualify for the World Championships again. Dan emphatically states that he has never used drugs and does not intend to do so. He wishes to prove that great accomplishments can be achieved without resorting to the use of dangerous muscle building chemicals.

In the following interview, this dynamic champion reveals his aspirations, philosophy, and training techniques in the world of Powerlifting.

**Yarbro:** Do you enjoy your position at Austin Peay as strength coach?

**Austin:** I love my job here. I would do this job for free, because I love working with these guys.

**Yarbro:** Do you enjoy seeing these young men get behind each other, yelling and screaming, you just don't find anything more enjoyable than that.

**Yarbro:** I notice these young men want to please you and do the best they can.

**Austin:** I try to get them to believe in themselves. We set goals for each other. This is what we want to do and we say, "OK, how are we going to work toward that goal?" Once we start progressing toward that goal, and I can make them believe that they can do it, and they see themselves making the weight, then they start believing in themselves and keep wanting to do more. Sometimes they have a lot more in them than they think they have.

**Yarbro:** What has been your best total?

**Austin:** The Senior Nationals of 1984 was my best total, 1609, which was 5 pounds off the world record in the 148 lb. class. I squatted 606, bench-pressed 369, and deadlifted 633.

**Yarbro:** Did you compete in 1985?

**Austin:** Yes, I competed in the Senior Nationals in Chicago. I finished third. I missed my last deadlift, which would have given me first place.

**Yarbro:** Do you anticipate breaking the world's record in the total this year?

**Austin:** Definitely. Right now in training, I have done 25 pounds over the world record. I'm hoping

Personal dialogue between PL USA Magazine and the Sport's Greatest Names.

to put all three lifts together and really break the record at the Senior Nationals. I really want to accomplish this drug free.

**Yarbro:** What has been your greatest thrill in Powerlifting?

**Austin:** Winning the World Championships. I don't want to stop there, though. A lot of people become satisfied with what they've done. They say, "I accomplished this much and I don't need to go any further. My long term goal is to get as strong and lift as much weight as possible, to find out my true strength in the 148 lb. class.

**Yarbro:** What advice do you have for the young lifter.

**Austin:** Young lifters see guys lifting a lot of weight and they can't wait to do it themselves. I tell them to be patient, you've got to have good form and technique. Don't rush it. I talk about nutrition and how to gain weight and lose weight, and how much bodyfat they should have.

**Yarbro:** I notice that you have some women working out in your facility. Would you like to comment on their training?

**Austin:** I want to show the women that they can lift weights and not actually end up looking like a guy. I have to sit down and explain the differences in physiology, and get across to them how weight training can make them look better.

**Yarbro:** What about women's competition?

**Austin:** We have four or five women who are thinking about getting into a powerlifting contest. They see other girls lift and they get interested in it. When I explain it to them, they say "Oh, can I try that?" and then they try it, and all of the sudden they say "I love this, I love this!" It's really catching on.

**Yarbro:** You look like a bodybuilder, as well as a powerlifter.

**Austin:** Well, Richard, I competed in bodybuilding in 1983 and won MR. GREENVILLE in South Carolina. I've given it up and try to concentrate on Powerlifting, but I think that whatever, should powerlifter or bodybuilder or whatever, should dedicate themselves to having a good body and not carrying around excess fat. A good trim body is what lifting weights is all about.

**Yarbro:** Dan, is there anything else you would like to add before we end this interview?

**Austin:** Well, in the future, I'm thinking of opening up a gym. I'm not sure of the exact location, but I plan to stay in good condition and help others.

**Yarbro:** I don't picture you opening up a facility for businessmen to come in and lay around in the sauna.

**Austin:** I plan on having heavy duty weights. I welcome all, but I definitely would want an atmosphere of heavy duty lifting. If you've got motivation, you've got everything. I ask these guys in the weight room to jump, and they say "How High?" That's they whole key, right there, motivation.

**Yarbro:** Dan, who motivates you?

**Austin:** I motivate myself. I'm looking ahead and thinking, this is what I want to accomplish. I'm trying to make these guys realize that to go 10-1 or 11-0, they have to really work in here.

**Yarbro:** So you're saying their goals in here can also be their goals on the football field.

**Austin:** Exactly.

**Yarbro:** Dan, thanks so much for a very pleasant and informative interview.

**Austin:** Thank you, Richard.

(Interviewer Dr. Richard Yarbro is a widely published Professor of Education at Austin Peay State University, and a former Mr. Tennessee over 40.)

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# POWER-RESEARCH

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## Blood Pressure Responses During a Powerlifting Competition

Mike Requa MSS, L. Jay Silvester PhD, LaVon Johnson PhD

classification, years of competitive experience, whether or not they were currently using anabolic steroids and whether or not they were planning to use amphetamines and/or epinephrine during the competition.

This study was conducted to examine the difference of pre-competition and competition blood pressure responses of those using anabolic steroids and non-users. Along with this, we observed the blood pressure responses of amphetamine and/or epinephrine users compared to the non-users. As a side line we attempted to determine if higher or lower blood pressure had any bearing on the number of successful attempts.

What is blood pressure? Blood pressure is the pressure, measured in millimeters of mercury (MM Hg), exerted against the arterial walls during the contraction and relaxation of the heart. Specifically during the contraction and relaxation of the ventricles of the heart. When the ventricles contract, blood is forced into the pulmonary vein and the

## In terms of Blood Pressure Response, What are the Implications of Powerlifting Competition?



hypertensive by the World Health Organization. Any blood pressure readings of over 124/80 should not be considered normal.

### Review of Literature

Blood pressure may vary with the size of the cuff used. When measuring blood pressure using the auscultatory method (cuff and stethoscope) a sphygmomanometer (cuff) 12 to 13 centimeters in width should be used. If the individuals being measured have a larger upper arm, a cuff which is normally used to measure blood pressure on the leg should be used. These sphygmomanometers usually measure 18 to 20 centimeters in width (8).

It has been postulated that an accurate reading of blood pressure may or may not be possible using the auscultatory method on large muscular arms. Scientific studies indicate that true blood pressure readings may only be determined by placing a pressure reading device (transducer) in an artery (13). This invasive technique is not one which would be agreed to by the vast majority of the population. At this time, auscultation seems to be the most reasonable alternative.

Ingestion of anabolic steroids is thought to contribute to the increased blood pressure due to the tendency of these drugs to increase the body's fluid retention. Most lifters who have been using anabolic steroids, especially the highly anabolic drugs, tend to exhibit a puffy appearance in the face. This increased fluid retention is directly related to the increased blood pressure and is one of the major short term side effects of use (8).

Anabolic steroids, plaques or hardening of the arteries can cause an increase in blood pressure. Dr. O. Lin Webb has shown that the use of anabolic steroids can decrease high density lipoproteins (HDL-C) in the blood stream as much as 50 percent, thereby increasing by up to 4 times, the potential for the individuals to develop life threatening atherosclerotic plaques (12). Couple this with the psychophysiological factors which can make a person who uses these steroids very irritable and aggressively and you have a type 'A' personality syndrome which may over-stress the cardiovascular system further.

Recently there has been some interesting research done on blood pressure response to weight training. The results of these studies are conflicting and inconclusive, but they do provide additional information for understanding blood pressures and strength training.

One report has suggested that the blood pressure response while weight training may be quite similar to the blood pressure response characteristic of endurance exercise (15). Systolic blood pressure increases at a linear rate during endurance exercise with little or no increase in diastolic pressure.

Another study involved 5 bodybuilders performing inverted leg presses (7). Results of this investigation showed that both systolic and diastolic blood pressures may in-

crease very dramatically in the trained bodybuilder when performing inverted leg presses. The average blood pressure values measured on these individuals arms with a sphygmomanometer and aethoscope during exercise were 355/281. These values are extremely high and would suggest that doing inverted leg presses may be very dangerous.

If breath holding takes place during an isometric contraction or when a lifter hits the 'sticking point' in a lift and continues to grind away, blood pressure fluctuations are amplified because of the increase in intrathoracic pressure. The immediate response of the cardiovascular system is a rapid increase in blood pressure then a drop, caused by the reduction of blood returning to the heart against the increased pressure (11).

The long term effects of competitive weightlifting and anaerobic training in general appears to indicate that resting blood pressures will increase. Athletes who train in an aerobic sport have shown increases in resting blood pressure with the addition of strength training workouts (5,10). For athletes who have been strength training 5 times per week, a reduction of training sessions to 2-3 times per week has lowered resting blood pressure values to or very near normal (14). It might be postulated that adding 5 weight training periods per week to an already busy schedule could cause, at least temporarily, a physiological reaction to the increased stress. Precisely what this reaction would be cannot be predicted, but the blood pressure response is certainly one parameter which might show a reaction to the stress.

An interesting study with the Bahrain National Weightlifting Team showed substantial increases in the resting systolic blood pressures following what is thought to be a traditional weightlifting training program (4). Training intensities were thereafter reduced on any athlete exhibiting an increase of 10mm Hg on his systolic blood pressure reading. The researcher reported that during competitions following this attempt at blood pressure control, competitive performances improved substantially. These observations suggest that competitive lifters may provide a means of predicting and improving performances.

Another method of blood pressure reduction is through aerobic training (1,2). However, the addition of aerobic training to the powerlifters training routine should be done with careful monitoring of bodily processes to preclude overstress.

Experiments conducted on rowers, skiers and weightlifters demonstrated the merit of using vibrational massage for aid in recovery, especially in periods of heavy training loads (6). Vibration at 10-15 Hz induced faster recovery from the stress of training as measured by lowered arterial blood pressures and improved performances.

Methods

Nineteen powerlifters who partic-

others were Class I and Class II lifters. The mean years of competitive experience was 6 years. All subjects signed an informed consent form and agreed to the test sequence. Eleven of the subjects last warm-up prior to each of the lifts and after their third or final attempts on the lifting platform. Care was taken not to interfere with the lifter's preparation. All blood pressures were recorded within 15 to 30 seconds of the lift and if the time ran over that self imposed limit there was no recording.

All blood pressures were obtained by the auscultation method using a pre-combated on each individual (this article continued on page 57)

## Diastolic Blood Pressure Response

Mean Diastolic B.P.

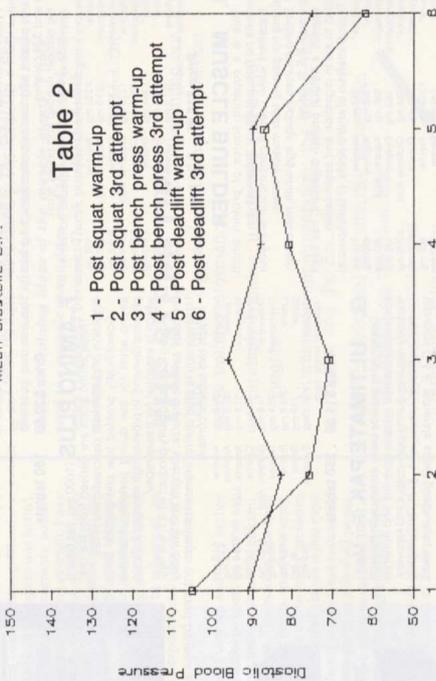


Table 2

- 1 - Post squat warm-up
- 2 - Post squat 3rd attempt
- 3 - Post bench press warm-up
- 4 - Post bench press 3rd attempt
- 5 - Post deadlift warm-up
- 6 - Post deadlift 3rd attempt

## Systolic Blood Pressure Response

Mean Systolic B.P.

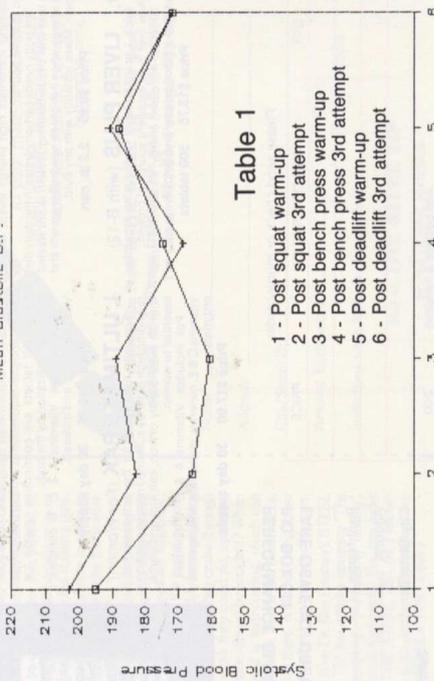


Table 1

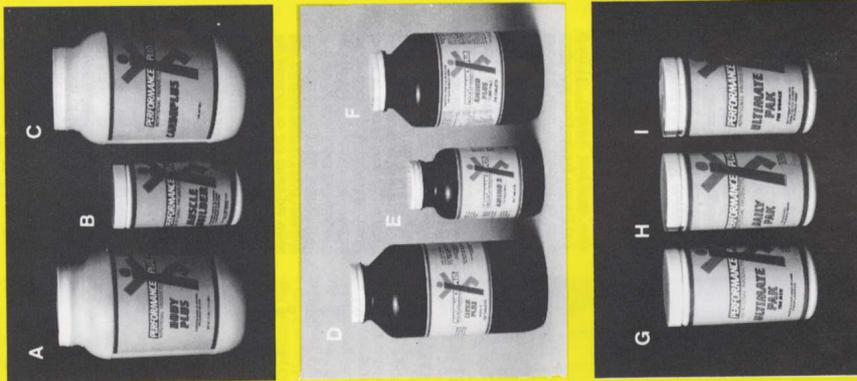
- 1 - Post squat warm-up
- 2 - Post squat 3rd attempt
- 3 - Post bench press warm-up
- 4 - Post bench press 3rd attempt
- 5 - Post deadlift warm-up
- 6 - Post deadlift 3rd attempt



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When I first began my weight training activities, I was fortunate because I did almost everything correctly. I used a limited number of basic multi-joint exercises that provided work for the major muscular structures of the entire body. I did one or two sets of each movement, using as much weight as I possibly could for 8-20 repetitions per set. I would usually terminate a set when I could no longer push out another complete or correctly performed rep. I trained three times per week, but often had to cut back to two when very tired or involved with other athletic activities. Without knowing a damned thing about proper strength training procedures, I became very strong and gained approximately fifty pounds of muscular bodyweight in a two year period, much of that coming in my first six months of proper training. Note that I said that most of my gains came in my first months of proper training. Like most youngsters who are interested in getting bigger and stronger, I read most of the available muscle building magazines. My first few months of barbell work was patterned after the routines I saw in these publications. Although I worked as hard as I thought it was possible, my progress was limited. I shunned the heavy basic work for easier isolation type movements, just like the "champs". Having a certain amount of naturally occurring strength, I was puzzled as to my lack of progress. Fortunately, I more or less stumbled upon which truly promote increases in muscular size and strength, and was well rewarded for my efforts. Over many years of training, I would occasionally leave my own garage, basement or loft for the stimulating environment of a commercial gym or club. Unfortunately, I would often be influenced, as most trainees are, by the lifting activities I was exposed to. In literally every instance, my progress suffered because I was swayed from my usual training procedures.

Training has to be purposeful to be effective. Every rep and every set has to count for something. I believe that one can make progress on almost any type of routine if he or she works hard at it, but training should be efficient, providing maximal gains in the briefest period of time. This includes time spent in the gym and the accumulation of training time over weeks, months or years. Training must lead to the attainment of a goal. One of the major problems with most strength training programs designed for football players is that most of the emphasis is placed upon the lifting of heavy weights, not necessarily the increasing of strength specifically for improvement as a football player. Powerlifters do many things in the gym that are either unnecessary for or counterproductive to progress. Each movement in the program should serve to get you closer to the goal you have set before you.

A major problem with most training is that a premium is placed on the completion of the program. If the routine calls for five sets of three reps, the sets are done, possibly recorded in a training log, and then forgotten until the next workout. Each set should be seen as a building block, taking you closer to your goal. That set should be addressed as a do-or-die situation, and concentration should be placed upon the proper performance of each rep. I've seen too many lifters do 135x5, 225x5, 275x5, 305x5 and 320x5 as a bench workout. I'm in complete accord that one has to warm up before attempting to lift heavy weights, but if one can comfortably handle 320 for five reps, what is 135, 225 and 275 for five going to accomplish, other than to wear you down so that you in fact have to use 320 for five instead of 330? This is the antithesis of purposeful training because 80 percent or more of the workout did not serve to bring the trainee closer to the training goal. Most training is approached in this manner: go through the sets in order to complete them as opposed to attacking the sets in order to make them work for you in terms of improving.

Part of the improvement that comes from purposeful training is psychological. I've heard many athletes talk about the benefits they receive from their weight training programs. The words most often used are "discipline", "toughness", "goal-oriented", and "sacrifice". After observing the training scene for so many years, most of these individuals couldn't possibly learn anything about the above from their training. How could they when they cruise through their workouts doing but a percentage of the work they could do, operating at a level of intensity that brings growth stimulation almost by accident? When great efforts are put into a task and the reward is forthcoming, much can be learned about one's emotional/psychological terrain. This is one more reason for going into the gym, remembering why you're there, and then doing those things that can take you closer to your goal as best as you possibly can.

(EDITORS' NOTE: This article was excerpted from Dr. Ken Leistner's STEEL TIP Newsletter. The current issue of STEEL TIP has articles covering "The Reality of Training", "Lipoma", "So Much for Specificity", "A Matter of Testing", "Effective Strength Building Program", "The Mental Approach". You can order STEEL TIP by sending a check for \$18 to THE STEEL TIP, 54 Fletcher Avenue, Valley Stream, New York 11580, or for further information, see Ken's ad for STEEL TIP in this issue of POWERLIFTING USA.)

## POWER-RESEARCH

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# Making Weight

by Dr. Judd Biontoto & Amy Ferrando

For many powerlifters, life seems to be an endless cycle of training and dieting. The training program is dedicated to achieving maximum strength and lean muscle mass, however, because the conventional approach to weight classification, the lifter is often put in the last week of his weight through the last week of his training in many cases. This weight is more taxing than the long training regimen itself and many lifters fail to follow their plan for competitive lifts because of their inability to lose weight properly.

Most doctors will tell you that the recommended method of losing weight is strict caloric reduction, weight is lost, or a combination of both. However, in this method of weight loss, the powerlifter does not subscribe to this method of muscle mass loss. This is especially true of lifters who have a low percentage of body fat. It is obviously an advantage of complete weight loss in the lowest possible weight class. Consequently, many powerlifters favor methods that promote dehydration in order to make weight that under certain conditions, the individual can lose as much as 10% of body weight by dehydrating without any detrimental effect on strength. Such weight losses are not all that common. In fact, we have weight loss by 10% of lifters who lost weight by 10% of lifters. It should be realized that this type of drastic change in water metabolism can be extremely dangerous because of the pronounced changes in kidney and cardiovascular functions: the consequences of which are difficult to predict. According to the medical profession, a weight loss of 5% or greater through dehydration is against better judgment, especially if done without medical supervision. The effects on a lean athlete are even greater. Keep this in mind the next time a contest is around. Now, let's take a look at the most popular forms of dehydration.

Many lifters use diuretic suits just prior to competition in order to lose weight quickly. After the weight classification, they immediately drink fluids to replace the water they lost through dehydration. Although this practice is widely used, it is dangerous in that it can lead to heat stroke and possibly death. When body becomes overheated, your body attempts to give off excess heat by radiation, convection, conduction, and evaporation. If you are wearing clothing that inhibits the body's ability to eliminate excess heat, your

large decrements in strength can result. Remember that according to research, most individuals can lose as much as 10% of their bodyweight without realizing a decrement in strength. However, before you get too carried away, keep in mind that more weight lost through dehydration, the greater the health risk.

The morning prior to competition, a modest dose of Lasix is taken, fluid intake should be limited throughout the day, and another modest dose should be taken that night. If, on the day of the competition you are still overweight, another dose may be required. After weigh-in, the body is rehydrated by consuming juices or Gatorade throughout the duration of the meet. Keep in mind, that representative dosages can not be applied universally and will be affected by body composition. Dosages SHOULD be dictated by a physician.

### POINTS TO PONDER

- (1) Dehydration may be one of the most expeditious, though not safest, methods of making weight.
  - (2) An athlete may lose up to 10% of bodyweight through dehydration without a significant decrement in strength.
  - (3) According to the American College of Sports Medicine, a 5% weight loss is on the outer limit of prudence, and it is quite likely that even this amount, without medical supervision, is too great for some athletes with lean muscle mass.
  - (4) Drastic changes in water metabolism can cause a decrement in strength as well as considerable health risks.
- (5) When using dehydration to make weight, electrolyte balance should be considered.

fluid, associated with congestive heart failure, cirrhosis of the liver, and renal disease. Lasix may also be used to control hypertension when conventional prescribed thiazides become ineffective. Lasix is a very strong diuretic that is prescribed in 20, 40, or 80 milligram dosages. Keep in mind that the aforementioned problems are of a serious nature and require significant diminution of body fluids.

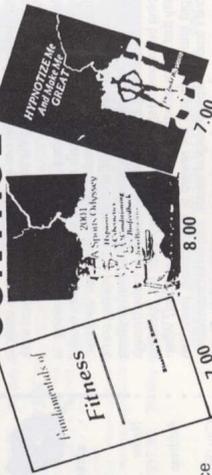
Any effective diuretic, like Lasix, beyond your body's ability to regulate it, heat related disorders occur. In some athletes, significant decrements in strength and endurance can occur due to the loss of electrolytes such as potassium, sodium, and chloride through profuse sweating from water losses of as little as 3 to 8% of total bodyweight.

Although through different means, saunas, steamrooms, and hot boxes are designed to emit steam or dry heat in order to elevate body temperatures and thereby bring about sweating and dehydration. Once again, heat stroke is possible due to the buildup of body heat and heat stroke are possible due to dehydration. For those of you who have experienced the necessity to weigh in, you have probably also experienced a "washed out" or drained feeling throughout the remainder of the competition. This is due, once again, to the loss of essential electrolytes. With a bodyweight loss of up to 3%, normal ingestion of food and minerals will replace the depleted electrolytes. Greater weight losses, however, may require electrolyte supplementation.

A diuretic is a medicine which extracts water from the body through stimulation of the flow of urine. The most commonly used diuretic is Lasix (furosemide) which is classified as a prescription drug. It is most often utilized for the treatment of edema, or the buildup of unwanted body

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Too often in preparation for competition, the other half of the powerlifting team, the coach, is ignored. It is imperative that the lifter choose the proper individual as his coach. Other wise, it's unlikely he'll achieve his meet objectives. For the individual selected as coach, it is essential that he understand the duties and responsibilities associated with this position. This article will attempt to coach by discussing the various roles and responsibilities the coach assumes as the meet progresses.

The overall task of the meet coach is to aid in his lifter's attainment of maximum performance during competition. To accomplish this the coach serves his lifter in three different capacities:

The first capacity is that of instructor. The lifter is especially critical if should instruct the lifter in proper execution of the lifts and what idiosyncrasies of the lifter's style may produce a red light. For more advanced lifters, this aspect of the coach's role is less important and my involve nothing more than clarification or confirmatory remarks. The next role of the coach is that of trainer. The coach should be able to apply any heat packs, ice bags or specialized wraps the lifter requires in order to compete. This role is most important when the lifter is still recovering from an injury while going into competition. The last capacity in which the coach serves his lifter is that of coordinator. In this role, the coach manages the lifter's warmup and wrapping to coincide with the progress of the meet. In this capacity he also monitors the performance of the lifter's nearest competitors.

Prior to leaving for the meet, the conscientious coach will insure that his lifter has packed all his equipment. He should also verify that the equipment his lifter will actually use in competition satisfies IPF guidelines. At this time, the coach should discuss opening attempts and meet strategy with the lifter. Guidelines for second and third attempts should be presented by the coach if the lifter is inexperienced. The coach needs to familiarize himself with any injuries his lifter may have and the therapies he's undertaking. The coach also needs to know if his lifter is at his desired weight or will be reducing weight on weigh-in. If the lifter is still reducing, recognition of the strength loss associated with declining body mass should be reflected in the opening attempts. For the novice lifter, the day prior to a meet can be a period of great anxiety. The coach can do much to help his lifter achieve maximum total by alleviating some of this strength training anxiety. The coach should insure that the talks with his lifter the night before to reinforce his confidence. Anecdotes from earlier meets the coach has lifted in and recollection of the progress the lifter has made in training are successful in reducing much of the novice lifter's pre-meet fear.

After all the opening attempts are

# STARTIN' OUT

A special section dedicated to the beginning lifter

## Guidelines for Better Coaching as told by Stephen P. Ferris



One of the best coaches in action at the A.D.P.A. National Collegiate, Tim McClellan (left), who is professionally a strength coach at Arizona State University. He also coaches over a dozen drug free athletes, around the country, by audio and video cassette. Among his most successful charges is Richie Wenner, who is seen here being handled by Tim in the process of winning yet another National Collegiate title as a lightweightweight.

provide some indication of where the bout occurred. In some instances, the coach is able to find out from the lifter's turn drawers near, the coach can help in wrapping and betting his lifter. Instead, the coach may apply a will of ammonia to this lifter as he walks to the platform.

During each of the lifts, the coach can best serve his lifter by each observing the execution of each attempt. If the lifter receives any red lights, the coach should be sure to

get out of the head judge's line of sight immediately or the lift may be turned down. The coach should be the one to walk over to the directors at the head table and provide his lifter's second and third attempts. If the lifter is following himself, this provides him with precious additional recovery time.

The coach should also be monitoring the performance of his lifter's nearest lifts. Their performance and know strengths (e.g., such as a big deadlift) may have an impact on the weight selected for a third attempt. The coach should always check his lifter's ranking after subtotals are calculated. This allows better mental preparation for maximum performance in the last lift.

Since most lifts last the better part of a day, the coach needs to keep his lifter relaxed and comfortable. This means insuring that his lifter receives appropriate food and drink throughout the day as well as keeping him physically limber. This is probably the single biggest responsibility for the coach, determining proper time for warming up for each of the lifts. Keeping the lifter ready between attempts, both physically and mentally is his next most important duty.

When the lifter's last deadlift hits the floor and the meet is over for him, the coach's responsibilities do not terminate. If the lifter has incurred any type of injury, it is the coach's duty in his capacity as trainer to see that proper medical attention is provided. If it is a minor injury, such as a strain or a pull, then the coach himself may apply the necessary ice and bandage in let excitement following a superior performance, the coach needs to retain his equilibrium and insure that all of the lifter's equipment is collected. Nothing is more frustrating than to do well at a meet and then shoes left at the competition site. Several days following the meet, the lifter and coach should assess their training in light of meet performance. Depending upon the total achieved, either fine tuning or major changes may be indicated in training routines. If the lifter has met or exceeded the goal for the meet, little encouragement to continue training is necessary from the coach, but if his lifter has totaled below expectations, the coach needs to provide both moral support and technical advice. An understanding coach at this time will help the lifter overcome his despair and persevere in his training.

The author has benefited during competition from the services of an outstanding coach, Mr. Arthur B. Fox. It is hoped that this article will provide useful guidelines to other powerlifting coaches. With better coaching, not only will individual lifters record better totals, but the sport itself will become safer and more enjoyable.

Copyright 1985 Stephen P. Ferris (EDITORS NOTE: have you got some tips for beginners that you'd like to see published in PLUSA? Send in your articles to "STARTIN' OUT", Box 467, Comanillo, CA 93011)

## Question & Answer

Your training questions are answered by Roger Estep, 1979 Senior National Powerlifting Champion, World Record Breaker as a Midheavyweight, and the 1985 MR, IRON MAN. For a quick response to your training question send \$10 to Roger Estep, 1413 Hologate Drive, Anaheim, California 92802.

**DEAR ROGER:** It seems like everything you read states that 6-10 reps builds mass, 3-5 builds strength, and 1 rep just tears you down. In one of Ken Leistner's articles he stated that he felt doing singles was not a very productive way to gain strength (Roger Estep being the exception). So, Roger, will you explain why 5 reps saw 87 percent of max are supposed to be better for you than say, 1 rep at 98 percent. I find this very interesting in the sense that in a set of 5 reps the first 4 reps wear you down so that the last rep feels like 98 percent. Why not just go to 98 percent in the first place? I guess what I'm trying to get at is what specific purpose does the first 4 reps accomplish (scientifically). **Chuck Estep**

**DEAR CHUCK:** Thanks for the question. It is an interesting one and one that is more of a challenge to answer than most. Actually, to give an in-depth physiological answer is beyond the scope of this response, but I will be giving attention to this in my upcoming book, so be on the lookout for it. The number of reps that build strength is somewhat subjective from individual to individual. I mean, when do you draw a line on a rep? If a person says five reps builds strength and has success at it and is a world champ, and another person says 6 reps and is also a world champ, then why can't I think what person came along and use 7 or 8 reps, or maybe 10 or 15 reps. I think what Dr. Leistner was trying to do was generalize on how the majority of lifters train. It has been proven in exercise physiology labs throughout the world that low reps and heavy resistance build fast twitch muscle fibers much quicker and give them additional thickness, more so than prolonged, high rep workouts, but the specific number of reps is up to the mental attitude of the lifter. Some lifters just can't handle the stress of doing singles all the year round, and determine instead that they get a better feel from doing 5s or 3s. If you train with me I absolutely guarantee that you will make progress by doing singles, because I will make you a believer in yourself. I will try to answer your question concerning what is the good in doing the first four reps of a five rep set, even though I don't subscribe to this kind of training. The first reps are good to develop some short-term endurance in the muscle, so that when you go to a meet, you will have some energy in the muscle that might normally be going to zero. You can strengthen your lift in positions that might normally be weak. If on the second rep, say, you get out of the groove and still make the rep, you will be able to do it up to the lifter. Some like five, some like three, however, how to do this with singles and how reps.

The basic answer is that it is up to the lifter. Some like five, some like three, and then there's me. So what? If you're doing what you like, you'll be successful, as long as your intensity is high. **Roger Estep**

**DEAR ROGER:** I am 23 years old and have been training for almost 2 years. My bodyweight is 168 at a height of 6'1" and even though I have gained close to 20 pounds since I first started, I feel I am going nowhere due to my bone structure. My wrists are not even making it to 7". They are approximately 6 1/2". (My shoe size is 10). I would be most grateful if you pointed me to any medical treatment to remedy this situation (that is, to increase the width of my bones overall, for example, an increase from 6 1/2" to 8" in wrist measurement, just to mention one bodypart). I would also appreciate it very much if you mentioned bone measurements of some of the great champions in the 242, 275, and SHWs, and if any of them was small-boned, and also who were the largest. **Bread James**

**DEAR BREAD:** At your age your bone structure is pretty much completed. Ossification of the long bones takes place in your teens and early twenties, so I would not expect to see any more thickness in your bones, but at a height of 6'1" and 168 pounds, you are considered lean for a bodybuilder or powerlifter. What I would recommend to you is to try to gain weight and after that you will notice increased size in your wrist, however, wrist size does not tell much about a person's physique or his strength. I don't know the measurements of top bodybuilders or powerlifters, because most of them change as they gain and lose weight. What you should do if you're interested in physique development is take a look at the greats and try to find one with the same structure as yourself, and follow his example. You are still young and have many years of training ahead of you, so look forward to improvement each year. Who knows, maybe someday other people will be looking at you as the example. **Roger Estep**

**Powerlifting Scholarships:** 4, one year, \$1,000 powerlifting scholarships are available from Oklahoma Baptist University. Contact Rickey Dale Crain, P.O. Box 1322, Shawnee, Oklahoma 74802 for further info.

## Powerlifting USA BACK ISSUES

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Dec/1981...1981 World Championship report, Clyde Wright Profile, World Master Championship report, Top 100 Lightweight (148 lbs.)

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Apr/1983...Eddie Peggely Profile, Mike Bridges Squat Routine, Off Season Training, Making Weight, Women's World Team Salute, Don Blue, Power Rack Training, Pioneers of Power - Pat Casey, TOP 100 242s.

Jun/1983...Women's Worlds, Judd Biasiotto Comeback, Vince Anello deadlift routine, Dan Austin, Hatfield on Cycle Training, All Time 800 squat list, Bill West - Pioneer of Powerlifting, TOP 100 Supers.

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Jun/1984...Hawaii Invitational, National Collegiate Championships, Fred Hatfield Profile, Joe Ladnier Profile, Joe Ladnier Bench Routine, Question and Answer by Roger Estep, Steroid Crackdown, Message from Chairman, ADPPA TOP 20 181s, TOP 100 SHWs.

Jul/1984...Women's World Championship Report, Jim Cash Deadlift Workout of the Month, Dave Schneider Profile, S.T.H. by Jeff Everson, Power Gym Directory, Drug Free Top 20 198s, Bob Wahl Power Profile, Masters Records list, TOP 100 114s, First Meet Impressions.

Oct/84...Medical Research Review, Jim McCarthy Profile, Gus Reithrich Deadlift Routine, Drug Free Nationals, Teenage Nationals, Anabolics and Women, Offseason Training, TOP 100 148s, Drug Free TOP 20 190.

Jul/85...Steroid Forum, The Big Business of Anabolic Steroids, Variable Split Training, National Masters, Bret Russell Deadlift Routine, High School Nationals, ADPPA National Collegiate, 2000 Total Club, ADPPA TOP 20 220s, TOP 100 Bantamweights, Debbie Poston benches 332.5

Aug/85...(LIMITED SUPPLY) Junior Nationals, Dave Jacoby Profile, ADPPA Women's Nationals, Women's Worlds, Lee Messer deadlift workout, Human Growth Hormone, ADPPA TOP 20 242s, TOP 100 Featherweights.

Sep/85...(LIMITED SUPPLY) Senior Nationals, George Hechter profile, Teenage Nationals, Kyle Brown profile, Rick Weil Bench Workout, Soviet Training by Fred Hatfield, Counter-Conditioning by Dr. Judd Biasiotto, "All Trax Lead to Jax", ADPPA TOP 20 275s, TOP 100 Lightweight Assistants, Sports Medicine Review, Carlton Smitkin deadlift routine, Training Alone, TOP 100 165s, ADPPA TOP 20 SHW

Nov/85...Dr. Fred Hatfield and the Magic Leg Machine, Randall Kea Drug Free Squat Program, Magruder the Magnificent, the Doctor on Drug Testing, World Masters, Neddar steen Profile, D.M.S.O., Intermediate Training by John Kuc, TOP 100 181s, ADPPA TOP 20 114s.

Jan/86...World Championships Report, Cees DeVreugdt Profile, Psychology, Ed Coan Deadlift Workout, Athletic Acromegaly by Dr. William Taylor, Predicting Strength Loss by Dr. Fred Hatfield, Bob Rood Profile, Nutrition Primer Part 2, TOP 100 220s, ADPPA TOP 20 132s.

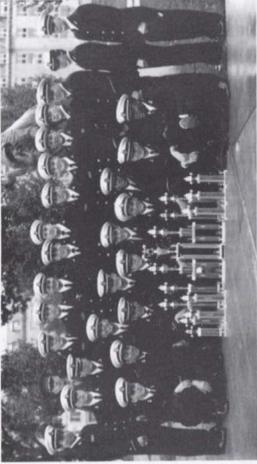
Apr/86...USPF Women's Nationals, Women's TOP 20, Lamar Gant Speaks, Randall Kea Bench Press Workout, Rick Cully Profile, Inosine Infor, John Kuc Advanced Bench Routine, ADPPA TOP 20 181s, TOP 100 SHW.

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**WOMEN'S TOP 20 Corrections:** Jo Wood's 303 bench press at 165 was not included on the listing, and Valerie Woolen's lifts at 165, 353 192 408 953 were not listed. Darlene Owens did not receive credit for her 345 175 360 880 at 123, nor did Pam Ctsop with her 325 170 345 840 at 114. Danni Hartmann's correct lifts at 148 were 396 squat, 441 deadlift, and 1069 total. She did not post the 225 bench at 165 listed for her, and points out that Sue Springsteen's 253 bench should be 241.

## ★WHO'S WHO IN POWERLIFTING★

Whether you're Big Name or No Name, send your picture and details ('Who's Who', Box 467, Camarillo, CA 93011) to this popular feature.



The 1985-1986 U.S. Naval Academy Powerlifting team posted victories at the Temple Hills Open and the Region II Collegiate Championships. Team Co-Captain George Janvier reports all members are drug free and are required to undergo a rigorous schedule outside of their lifting, including weekly drill sessions and very little sleep. The team has 5 returning All-Americans and expects to be a top contender for the National Collegiate title in Chicago.



Ray Fratarcangelo, 40 years of age, is a former All-American and professional lifter who played in the now defunct American Athletic Union powerlifting league. He was the first to be ranked in the top 100 placed first in both, but broke six state master records at 198 and 220. His best lifts are 606 330 622 1559, and he hopes to increase his total in order to compete in the National Masters this year. Photograph and information courtesy of Mr. Don Sullivan.



Kim Belden started her lifting career in Virginia, winning at the Chesapeake Bay Open, and taking 2nd in the Virginia State meet, followed by a 1st in the 148s at the All South meet with a 710 total. Now in her second year of law school at the University of Montana, while her Navyman husband Brian is cruising the Mediterranean, she credits much of her success to the people of Olympian Gym in Virginia Beach.

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## U. S. P. F. SENIORS QUALIFYING TOTALS REVISED!

The U.S.P.F. Executive Committee has lowered the qualifying totals for the U.S.P.F. Senior Nationals in all classes, by approximately 7 1/2 percent, opening up this full drug tested meet to many more potential entrants this year. The new, minimum qualifying totals are 114-841, 123-974, 132-1127, 148-1300, 165-1483, 181-1580, 198-1697, 220-1769, 242-1850, 275-1927, SHW-1947.

Recent drug testing effective at detecting prior drug use, and this meet will be tested by the same lab, therefore, this is a major opportunity for drug free athletes to enter and place well in the U.S.P.F. Senior Nationals, from which the team for the World Championships will be selected. The ADFPA has also lowered some of the qualifying totals for their Teenage Nationals this year.

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# THE SENIOR NATIONAL POWERLIFTING CHAMPIONSHIPS

**NOTE**  
the New Revised Qualifying Totals for the USPF Seniors  
114 - 841  
123 - 974  
132 - 1127  
148 - 1300  
165 - 1483  
181 - 1580  
198 - 1697  
220 - 1769  
242 - 1850  
275 - 1927  
Shw - 1947

This Top 20 list by Jim Gallagher covers lifts made in sanctioned American Drug Free Powerlifting Association meets from February 1, 1985 to February 15, 1986.

Please send a copy of all ADFPA meet results to Jim Gallagher, 301 Pine St., Glenolden, PA 19036. This will keep these lists as up to date as possible. Thank you.

Those who appear on the A.D.F.P.A. TOP 20 list are eligible to receive PL USA Achievement Awards. For details and ordering information see this issue's Top 100 listing.

SQUAT	BENCH PRESS	DEADLIFT	TOTAL
710 M. Massone 54/85	657 M. Giron 72/205	716 E. Hiler 21/085	1724 S. Cain 72/205
678 M. Giron 72/205	420 R. Wenzler 83/285	700 P. Lench 31/165	1724 S. Cain 72/205
650 J. Lennick 42/085	419 M. Foggia 3/20/85	685 L. Humphrey 54/85	1680 J. Lench 42/085
634 S. Cain 71/785	419 E. Stuh 11/785	672 R. Craft 72/285	1670 R. Craft 72/285
628 C. Tatum 3/20/85	415 R. Cernielli 9/8/85	670 J. Szegedy 4/13/85	1655 M. Massone 54/85
623 T. Lik 42/085	413 S. Cain 72/285	662 M. Giron 72/285	1625 R. Wenzler 11/24/85
615 J. Wearth 11/9/85	410 R. Kowalcak 3/23/85	650 J. Lench 3/20/85	1604 J. Cain 51/195
612 G. Hiller 72/285	408 L. Bostic 2/10/85	650 C. Cole 4/13/85	1598 E. Stuh 11/785
606 M. Felford 4/20/85	408 R. Melford 4/20/85	650 J. Lench 10/26/85	1582 M. Foggia 3/20/85
605 S. Symanski 4/13/85	408 J. Jemess 5/11/85	650 K. Steele 8/17/85	1580 G. Dingle 3/23/85
604 R. Craft 72/285	408 L. Lench 3/16/85	639 J. Flora 7/22/85	1570 S. Symanski 4/13/85
600 G. Dingle 3/23/85	400 J. Clafini 9/8/85	630 G. Dingle 3/23/85	1565 J. Szegedy 4/13/85
600 M. Kreiger 4/13/85	397 R. Craft 72/285	630 M. Dodson 5/4/85	1560 C. Cole 4/13/85
600 T. Morgan 4/13/85	391 J. Johnston 4/13/85	628 D. Herbst 5/11/85	1560 C. Cole 4/13/85
590 B. Tatum 3/20/85	390 B. Tatum 3/20/85	620 M. Massone 5/4/85	1554 J. Bostic 2/10/85
590 R. Wenzler 11/24/85	390 C. Meritt 9/8/85	615 R. Wenzler 11/24/85	1554 J. Bostic 2/10/85
590 R. Brown 2/8/85	390 M. Vasellini 11/9/85	612 F. Schutter 4/20/85	1550 J. Morgan 4/13/85











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**RESPONSE**...This letter is prompted by Dr. Fred's passage in the March issue of PL USA. You see, I'm in a "snivelling" mood. Yes, Dr. Fred, I'm snivelling...because of the Senior National judging, the splits in our sport, the drug dispute, and above all, I'm snivelling because of the hypocrisy. Hypocrisy is an awesome opponent because it changes its colors right before your very eyes. I'm also enraged at the powerlifters & former powerlifters who have set national records, the same ones that blazed the steroid trail, with their heads & totals held high. Were these records set through the use of that "super duper, multi-vitamin/mineral/amino acid pack that a certain fellow has given his solid endorsement to? Then there are the powerlifters, former powerlifters, and so-called friends of powerlifting, the leeches who have made small fortunes by selling those "evil drugs" to the "...majority of us who use drugs who don't know a damn thing about what we're doing..." Well, please excuse us for our ignorance. Perhaps someone could direct us to a seasoned veteran that might sit us down & explain to us the "proper" use of steroids. Many of the so-called experts that I've encountered were perfectly willing to have more than enough inventory to supply you...cash or credit? Who are the enemies here? In my opinion, it's the kind of person (I'm sincerely not referring to Fred Hatfield) that regularly spouts off his anti-drug rhetoric, when I know, as do dozens or hundreds of others, that at one time this same person please do not misunderstand me. No one can rationally condone the use of steroids for someone else, however, now that it has gotten down and dirty, no one is going to make the decision for me, least of all, the hypocrits. I don't care if so and so has set world records, if he sits in the judge's chair, or if his name happens to have a "Dr." in front of it!

Perhaps it is the end of an era in Powerlifting, but I don't think so, not unless the competitors are all gone. You see, so long as there are real competitors in our sport or, for that matter, in any sport, there will be some sort of drug use. A competitor just can't draw a line between what to do & what not to do to win...it's a very simple decision. You do anything & everything. You might kick the drug user out of the contest; but you can't kick the competitiveness out of him. Just winning a contest is not enough, not unless the performance was absolutely perfect. Only where there is perfection can there be no improvement, and we all know that perfection does not exist in our mortal world. There is always room for improvement, always another goal to attain, always another level of achievement to be reached. Competitors will drive themselves to these goals using all means available. It has been instilled in us as far back as Little League. Even if a competitor has beaten everyone else in the world, that person is still driven to exceed even his/her own previous accomplishments. It's a tough path to follow, but it's the path that many of us have chosen. (A top ranked lifter)

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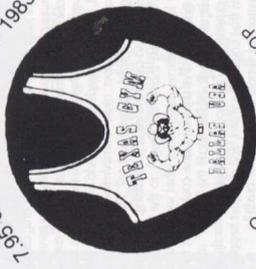
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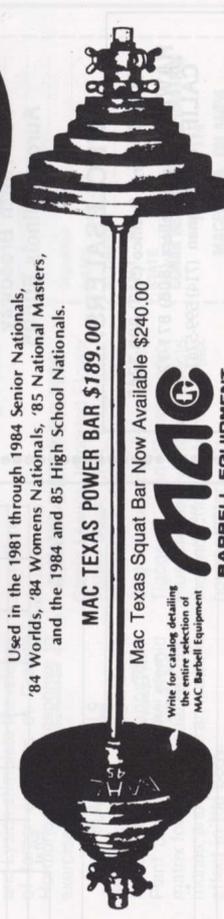
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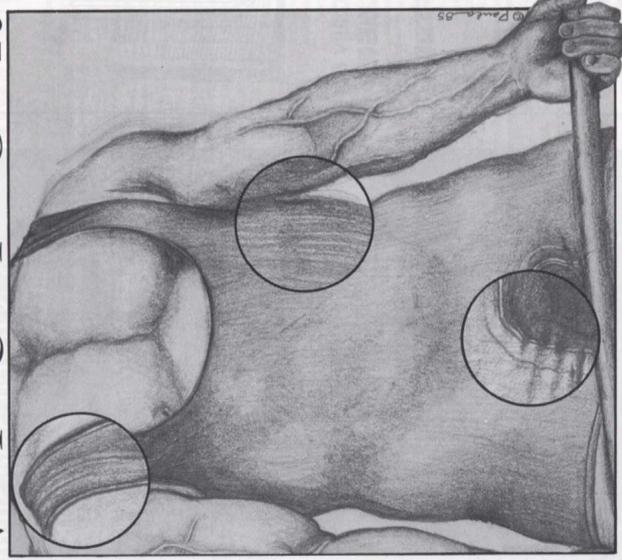


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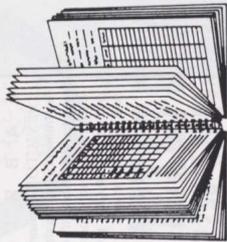
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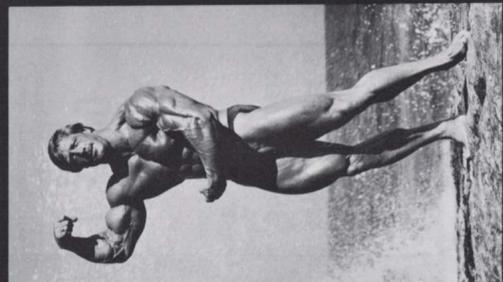
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Tony Emmott, Mr. Universe 1978-79

(this article continued from page 21) calibrated sphygmomanometer and a stethoscope. Measurements were taken with the subjects in the seated position. Readings were difficult to obtain due to noise from back slapping, congratulations, loudspeakers, fan noise, etc., but none were impossible to obtain. A leg cuff, which some believe should be used on large muscular arms was not used (8,13). The cuff used was a large adult size cuff and comfortably fit an upper arm measurement of up to 20 inches.

Results and Discussion  
Because of the many variables that can cause blood pressure fluctuations and the small differences between the steroid and non-steroid groups, it was deemed practical to use a simple descriptive model in the analysis of the results.

Surprisingly, there was little difference between the pre-competition blood pressures of the steroid and non-steroid groups. The non-steroid users had slightly higher blood pressures at weight-in (169/111 to 165/110) than the steroid users respectively. The most significant data, resulting from testing at the weight-in was that all participants exhibited values indicating hypertension. Mean values for all subjects were 160/110. Even though most of the subjects were experienced (mean 6 years) their blood pressure readings suggested either extreme anxiety or elevated blood pressure. There were no other outward signs of distress such as perspiration, abnormally high heart rate, confusion, etc. The cuff size may have influenced the readings, but those with the largest cuffs had readings similar to or slightly below the average pre-competition readings of the non-steroid group. There were no differences in heart rates of the blood pressures and heart rates of those who admitted to epinephrine and amphetamine use compared to those who were not on the drugs. More lifts, choices (5) to give them a hoped-for monetary high just prior to attaining their lifts. Five of the lifts resulted in both hypertensions and epinephrine. These five lifts tend to distract the use of these two drugs to the deadlift. One lifter confided to us that his search for juicy Fruit and a Snickers bar had proven unsuccessful so instead he had settled on speed and a shot of adrenaline just for a little pick-me-up. The dose for those taking these drugs was not determined.

Two subjects admitted to taking epinephrine, amphetamines and cocaine. Neither exhibited higher blood pressures or heart rates than others in the group. Upon completion of their deadlifts they did show signs of disorientation and confusion. It was also the researchers' observation that neither could dig one out of the well inasmuch as both missed their last two attempts in the deadlift.

Comparing pre-competition blood pressures with competitive success shows that blood pressure does not provide a means of predicting success at a powerlifting meet. It is worth-

while, we feel, that information on blood pressure and performance may prove helpful on an individual basis.

Tables 1 and 2 show the average systolic and diastolic blood pressures at weight-in and at other times during the powerlifting competition for the steroid and non-steroid users. The elevated systolic blood pressure after the last warm-up in the squat indicates that something produced lower blood pressure in the latter case. A possible explanation for this is the anxiety all lifters feel at the beginning of a competition when compared to having successfully completed the first lift.

A reduction in the perceived stress is indicated in the systolic response of the steroid users after the completion of the squat, but the non-users show the exact opposite response. An explanation for this result is simply not able to be postulated. During the bench press the non-steroid group produced blood pressure values which concur with research that arm work can produce systolic blood pressure responses higher than those produced by leg exercise (7).

Blood pressures produced during the deadlift were generally the same as those exhibited during the squat. Considering the concentration of amphetamine, epinephrine and in some cases cocaine use during the deadlift, it might be expected that blood pressure values during this lift would average higher than those readings during the squat and bench press. The results did not corroborate that expectation.

The diastolic blood pressures during much of the competition were quite interesting. The large decrease as shown in Table 2 was speculated to be due to the shock and exhaustion in the medical sense, to pooling of the blood in the extremities. While taking measurements on two of the subjects the sphygmomanometer dropped to zero with no discernible pulse of the sound of the heart beat. Due to the noise it was impossible to detect the changes from the fourth to fifth Korotkoff sounds. It is not unusual for a person with heavy body fat to take the fifth sound the way to zero on the sphygmomanometer. An estimation was used to define the change from the fourth to fifth sound based on the precompetition blood pressures and other readings throughout the competition on these two individuals. These subjects were double checked with the sufficient observation that their blood pressures returned to values approximating group norms in a relatively short period of time.

Conclusions and Recommendations  
This study indicates that there is no detectable difference in the blood pressure responses of anabolic steroid users and non-users at the weight-in nor during participation in powerlifting competition. These blood pressure results do not concur with results determined in related research but they are accurate estimations of 19 powerlifters in a competition setting. More research on

this subject may reveal a pattern of blood pressure responses that can be expected of powerlifters and other strength athletes.

Excluding the mean weight-in pressures it can be concluded that powerlifting does incite high blood pressures, but that they are short-lived and therefore may not be harmful to one's health or life if the individual is non-symptomatic.

The information presently available seems to suggest that as an individual gains the strength and/or size necessary to be competitive in powerlifting and perhaps many other sports requiring great strength, his blood pressure is elevated above so called normal levels. Whether or not this is a problem with the currently available measuring devices or is in fact an undesirable, although necessary, physiological response to self-imposed demands for increased muscle mass and muscle tone is presently unclear.

It is recommended that all powerlifters monitor many of the major functions of their bodies including blood pressure. Because our study suggests that powerlifters may be hypertensive, we suggest that all lifters have their blood pressures checked by a qualified technician to assure themselves there are no serious problems.

The majority of powerlifters avoid most forms of cardiovascular conditioning because of their belief that it is unnecessary. To combat that life threatening effects of cardiovascular disease brought on by a sedentary life style, anabolic steroids, diets high in fats, high blood pressures, etc. one should seriously consider incorporating some form of cardiovascular training into the entire conditioning program to ease all or most of the stressors associated with the use of anabolic steroids. It is suggested that the other weeks of the training cycle and certainly the off-season be open for additional cardiovascular training.

To develop a program for cardiovascular training, such variables as progression, intensity, duration, type and frequency must be decided upon. Basically one should train 3 to 5 times per week for a minimum of 15 minutes at approximately 70 percent to 85 percent of max heart rate. The progression of training may take place in the intensity, duration and/or frequency. The type of training is purely individual and may include jogging, swimming, stationary bicycle, and weight training, etc. Because of the extra weight that powerlifters carry one must take into consideration the additional stress on the supportive structures. Therefore, activities such as jogging and interval sports activities may be precluded. If you are over 35 years old the American College of Sports Medicine advises that a graded exercise test and electrocardiogram be performed to check the fitness level and underlying pathology of the individual.

We wish to thank all those who participated in this project. No one

turned us down when approached with this idea and to this we are very grateful. Your participation has helped to shed a new light on this subject and very likely saved a few lives. No special thanks goes to John Luffy, Northwestern's Meet Director, who went out of his way to accommodate us, but not at the expense of any lifter's performance.

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### ABOUT THE RESEARCHERS

Mike Reque is a graduate of the United States Sports Academy in Mobile, Alabama with a Master of Sport Science degree in Fitness Management. He has been an active competitor in powerlifting, weightlifting and cycling. Mike Reque is currently a graduate student at Boise State University and served a one year contract as a Strength and Conditioning Consultant in Sabah, Malaysia with the United States Sports Academy. He is currently planning on a career in the field of strength training.

John Silvester is a Professor of Physical Education at Brigham Young University. He is a multi-world record setter in the discus and Munich silver medalist. Dr. Silvester is widely published in research journals and is a proponent of drug free powerlifting.

LaVon C. Johnson is the Chairman of Fitness Management at the United States Sports Academy in Mobile, Alabama. He has published many of the original research articles on anabolic steroids and is considered an expert in this area. He has exercised his knowledge of the field of exercise physiology and cardiac rehabilitation along with being an avid follower of powerlifting and strength sports.

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about. Each had a gift for their competitor in their changed as well as ideas. Ollar Stimpson the team manager and the president of the Icelandic Powerlifting federation is to be commended for his leadership and vision. It is a reality. It all started as a conversation between him and myself at the 1985 World Championships in Finland. Working together and writing a book on powerlifting is what we have been doing and Iceland this summer in Iceland. I would like to thank all those people who helped out at the meet, loaders, referees, competitors, etc. for the support and help. I would like to thank Don Amni and Don Amni for their efforts behind the scenes. And to my workout partner and friend, John Macdonald, for his support and help. I would like to thank you for your generous financial support in making this happen. I couldn't have done it without you. (Thanks to Bob Packer for results)

### ADFB Region 12 Women's Open

Table with columns: Name, SQ, BP, DL, Total. Lists names like S. Gutierrez, S. Slaughter, M. Belliveau, etc.

### Armed Forces Championship

Table with columns: Name, SQ, BP, DL, Total. Lists names like F. Lewis, W. Williams, etc.



Doug Pettit, manager of the MUS CLE MARK Fitness Store in San Diego, California won his class in the California State Championships and hopes to lift at the Junior National Championships in Dallas this June. Photo and info by Lee Sokol.

had this been done. For a country whose population is less than that of the city of Fresno or the State of California, it was plainly clear that we don't have a monopoly on strength. This competition was a worthy competitor for the Icelandic with a total of 1500 lbs. to Eilons 1399 lbs. Iceland's former California State Champion and Mr. Iron Man, Dolph Pierce.

The current Icelandic Champion at 82.5% class, but showed a lot of potential for the future. USA team member, Dave Hazewood in the 90 kg. class opened the door for Balldur in the 110 kg. class. The match up between Tony Hardridge, who totaled 2017 never got off the ground as Magnusson's recent leg surgery could be the cause of his loss. The second match up at 110 kg between Iceland's Hardridge and the USA's Dolph Nickel missed one Squat and his second and third benches. A very nervous Nickel only completed one Squat and one Deadlift and was well below his real horse race until the current 110 kg. Icelandic Champion fell to the red lights and missed his second match up. The USA's Dolph Nickel scored into everyone as he almost missed the competition as it took him three times to make his opener at 738 lbs. The second match up at 125 kg between Tony Hardridge and the USA's Dolph Nickel looked to be a good match. Pettit's misses at 688 and 705 in the Squat put the veteran, Transaaron and 451 Bench Press and 727 Deadlift with 1300 lbs. total to best Pettit by 40 kg. In the supers we had again two match ups. In the first one the USA's Gerry Edwards, weighing in at 151 kg. faced Doug Pettit, who weighed in at 145 kg. Gerry Edwards was a very nervous man who was truly an awesome sight. When asked about his size he said he was still growing and that his father was 6 foot 8 inches tall. Gerry Edwards was a very nervous man who was truly an awesome sight. When asked about his size he said he was still growing and that his father was 6 foot 8 inches tall. Gerry Edwards was a very nervous man who was truly an awesome sight. When asked about his size he said he was still growing and that his father was 6 foot 8 inches tall.

Table with columns: Name, SQ, BP, DL, Total. Lists names like H. Magnusson, D. Pettit, M. Belliveau, etc.

Through his years California State Class I and above Powerlift Championships lacked a large entry list this was more than made up for by the California State Championships. The competition was further enhanced by the appearances of Eilons, current World Champion in the 56 kg. class and five times World Champion Magnusson. In Dallas, Eilons had his best lift in his career. He lifted 250 lbs. on the bench with an easy 319 and just barely missed 347 lbs. on his second and third attempts. His third attempt Deadlift of 518 lbs. was done with a clean and jerk. Eilons was a very nervous man who was truly an awesome sight. When asked about his size he said he was still growing and that his father was 6 foot 8 inches tall. Eilons was a very nervous man who was truly an awesome sight. When asked about his size he said he was still growing and that his father was 6 foot 8 inches tall.

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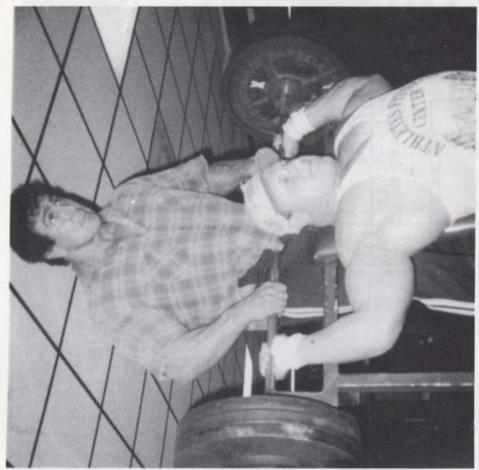
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**JOE LADNIER**, punching out a 350 pound bench. Behind the Neck Press, with Rick Poston spotting. No wonder he can bench 600. Photo courtesy RICK Poston.

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1 Feb 86 - Pueblo, CO

137	B. Rodriguez	235
138	Mike Lopez	235
139	Ken Madrid	230
140	Ray Carson	215
141	Ben Mendoza	310
142	Jim Salazar	310
143	Eric Brava	280
144	Don Young	375
145	Mark Oscar	320
146	Pat Goodrich	320
147	Bill Kelly	320
148	Mike DeGraes	315
149	Jeff Claven	380
150	Ned Sutton	355
151	Dan Pierson	335
152	Terry Lake	475
153	Joe Waggoner	365

**Central Conference C.C.C. Meet**  
14 Feb 86 - Hillsboro, IL

123	Turner	345
124	Plam	430
125	Lampkins	400
126	Johnson	500
127	Feliciano	350
128	Scoggins	365
129	Steward	475
130	Alwood	490
131	Malik	575
132	Eddington	500
133		405

**All South Bench Press**  
22 Feb 86 - Tampa, FL

**WOMEN-MALONE**  
Scott Malone 200  
Hooper 134 180  
Thompson 117 160  
Somerville 121 165  
E. Harding 120 160  
S. Baine 135 110  
T. Greider 189 305  
C. Bradford 177 375  
V. Vignery 315  
Montgomery 152 310  
Clark Sandau 275

**MASTERS-Age 35-55**  
B. Ebert 210 385  
S. Cole 131 260  
L. Cole 184 300  
P. Downing 172 315  
M. Turner 166 280  
L. Gunders 189 305  
J. Swinall 153 215  
L. Swinall 153 215  
Goldstein 148 170

**MASTERS-Age 55-over**  
L. Ventura 214 470  
M. Turner 231 470  
R. Schwartz 196 425  
J. McNeil 195 405  
R. Hayes 201 405  
C. Batoon 225 420  
C. Quinn 219 395  
J. Deall 168 320  
J. Price 128 240  
J. Billings 175 310  
K. Stouff 232 355  
F. Hart 165 295

**QUANTICO 225-285**  
D. Denham 300  
Mike Turner 270  
Sandy Beach 460  
Jeff Jordan 425  
C. Pieschke 400  
Bob Brown 400  
Joe Ladnier 600

**MEN-OPEN**  
D. Castellano 485  
Doug Denham 300  
Mike Turner 270  
Sandy Beach 460  
Jeff Jordan 425  
C. Pieschke 400  
Bob Brown 400  
Joe Ladnier 600

**MEN-OPEN**  
D. Castellano 485  
Doug Denham 300  
Mike Turner 270  
Sandy Beach 460  
Jeff Jordan 425  
C. Pieschke 400  
Bob Brown 400  
Joe Ladnier 600

**Central Iowa Bench Press**  
15 Feb 86 - Des Moines, IA

**WOMEN**  
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Teri Lewis 90  
Sherrae King 80  
Dan Swift 415  
Rick Olson 410  
Don Hazen 440  
Scott Williams 315  
Carl Klheim 320  
NOVICE  
1484 under  
Randy Hocken 255  
Mark Williams 245  
G. DeBerena 260  
Brad Klacke 270  
Randy Hocken 255  
Larry Holts 310  
Rick Swanson 220  
Curt Brookhart 205

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15 Feb 86 - Des Moines, IA

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Sherrae King 80  
Dan Swift 415  
Rick Olson 410  
Don Hazen 440  
Scott Williams 315  
Carl Klheim 320  
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Mark Williams 245  
G. DeBerena 260  
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Rick Swanson 220  
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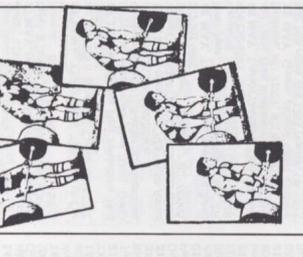
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**(A) NATURAL GROWTH FACTOR STIMULANT**  
These essential amino acids stimulate the release of the body's natural growth hormone for increased muscle size and strength.  
L-Ornithine 1500mg  
L-Alanine 1500mg  
L-Lysine 1500mg  
100 Tablets \$11 or 2 for \$21.

**(B) ANABOLIC GLANDULARS**  
Our raw glandulars are freeze dried to retain the natural occurring nutrients. Two tablets contain the following:  
Whole Pituitary 300mg  
Otic 300mg  
Pineal 300mg  
Thymus 300mg  
Kidney 300mg  
1500 M.S.E. COMPLEX 800mg  
100 Tablets \$9.50 or 2 for \$16.

**(C) AMINO ACIDS**  
100% natural, each tablet contains 1400 mgs. of amino acids derived from L-cystine hydroxyacetate and L-Ornithine HCL.  
L-Ornithine HCL 1500mg  
L-Cysteine 512mg  
L-Histidine 185.4mg  
L-Arginine 307.3mg  
L-Alanine 803.9mg  
L-Threonine 351.2mg  
L-Proline 593.2mg  
L-Tryptophan 23.4mg  
325 Tablets \$12 or 2 for \$23.

**(D) ARGENTINE BEEF LIVER**  
Liver is the most concentrated source of vitamins and protein essential for cellular growth and repair, a body builder's favorite staple for many years.  
B1 Thiamin 0.23mg  
B2 Riboflavin 5.50mg  
Niacin 150.0mg  
B6 Pyridoxine 60.0mg  
Pantoic Acid 1250mg  
Protein Content 60%  
500 Tablets \$18.50 or 2 for \$35.00  
250 Tablets \$10.50 or 2 for \$20.00

**(E) CARBO PLUS**  
Specially formulated to be taken at any time, for immediate energy proceeding a workout or competition. Carbo Plus goes to work fast! Fueling blood sugar levels with clean burning glucose supported by the rapid utilization of dextromonoglycerate. With no lagging programmed from the gradual breakdown of starch.  
24 oz. can \$10.95 or 2 for \$21.00

**(F) MINERAL ICE**  
Mineral Ice is a new external pain relieving gel for temporary relief of minor aches and pains of muscles and joints. Also for use on strains, bruises and sprains. Works better because it's formulated base. Methol in a specially formulated base.  
8 oz. bottle \$9.95 or 2 for \$19  
16 oz. bottle \$14.95 or 2 for \$27

**(G) DMSO**  
Also a therapeutic pain reliever to soothe aching muscles and joints. Non-toxic, non-irritating, non-flammable.  
8 oz. Bottle \$8.90 or 2 for \$17

**(H) CERNELLE POLLITABS**  
Pure flower pollen concentrate. Pollitabs is a unique Swedish supplement for athletes. What makes Pollitabs special? They boost energy rapidly, speed recovery time, increase wind endurance and increase strength necessary for peak performance.  
B1 Thiamine, B2 Nicotin, B3 Pyridoxine, B5 Pantoic Acid, B6 Vitamin, B12 Folic Acid, Calcium, Phosphorus, Potassium, Sodium, Magnesium, Iron, Manganese, Copper, Zinc, Silicon, Chromium, Molybdenum, Boron and Titanium.  
250 Tablets \$36.00  
100 Tablets \$16.00

**(I) MUSCLE FUEL**  
Ultimate carbohydrate for athletes, an excellent pre-workout drink for intense training. Mixes instantly without a blender. Ideal for carbohydrate loading. Ingredients: Granulated complex carbohydrates extracted from grains.  
2.2 Pounds \$11 each or 2 for \$21.

**(J) NATURAL STEROID PAK**  
Each PAK contains: Natural Growth Hormone Stimulant, Potassium, Multi-Vitamins, Vitamin C, Free-Form Anno Acids. Contains a 30-Day Supply.  
\$18 or 2 for \$34

**(K) BULK-UP**  
The collagen used in this drink is predigested which promotes quick assimilation.  
12 Fluid Ounces per bottle/  
Case of 12 \$36.00

**(L) PROTEIN POWER**  
This unique drink can be used to lose or gain weight. To replace a meal for losing weight, simply drink one or two cans. To gain weight, simply drink one or two cans after your meal. Available in chocolate.  
Case of 12 \$16.00

**(M) MILK & EGG PROTEIN**  
A 90% protein drink mix with Brewers Yeast, Lecithin, Desiccated Liver, Pain and Bromelain.  
16 oz. Bottle \$10  
32 oz. Bottle \$18

**(N) WEIGHT GAIN**  
A natural weight gain drink containing 550 calories per serving.  
10 Fluid Ounces per can/  
Case of 12 \$16.00

**(O) NATURE'S BEST HARD-CORE TRAINING PAK**  
Natural Steroid Formula, B-Complex, C-Complex, Digestive Enzymes, Vitamin E, Lipotropic Formula, Super Minerals, Vitamin A & D, Argemintine Liver.  
Contains a 30-Day Supply \$32.00



# Feel the Power!!

**STYLE 310**  
• 4" Back Tapered to 2 1/2" Front  
• Suede Inside & Out  
\$36.95

**STYLE 410**  
"Competition Belt"  
• Heavy-Duty Double Tongue Buckle  
• Brushed Suede Inside & Out  
• 10cm Wide x 1.3mm Thick  
(Diamond Stitching \$2.00 EXTRA)  
\$54.95

Prices Subject to Change Without Prior Notice

**SPECIAL BONUS OFFER:** Order now and receive free training straps (valued at \$4.95) with each POWER BLASTER belt.

**S & H "Power Blaster" Weightlifting Belts**  
Colors: Brown Suede, Blue Suede, Red Suede (Except Style 110).  
Sizes: S, M, L, XL

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City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Quantity \_\_\_\_\_ Style# \_\_\_\_\_ Belt Size \_\_\_\_\_  
Colors \_\_\_\_\_  Diamond Stitching (Add \$2)  
Total \$ \_\_\_\_\_  
(PA only, add 6% sales tax)

**Send Order To:**  
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(Ask For Bob)

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Pharmacy Order Form For Each Additional Weight Belt Ordered  
All Belts Manufactured by W.M. Bashin Co. With Over 40 Years In The Industrial Belt Manufacturing Business!  
Please Allow 3-6 Weeks For Delivery



Size	Waist	Middle Hole
S	26"-33"	30"
M	28"-38"	33"
L	31"-41"	36"
XL	34"-44"	39"

Distributor Inquiries Welcomed

**Buy direct from the manufacturer and save!**  
Meet POWER BLASTER, the weightlifting belt that supports your POWER function with effective support. POWER BLASTER belt is handcrafted by skilled professionals who take pride in producing an attractive, dependable product. Order your personal POWER BLASTER weightlifting belt today! Substantial savings are available by ordering direct from the manufacturer.

**Each POWER BLASTER belt offers these features:**

- Made from genuine leather
- Heavy-duty buckles, made from nickel-plated steel
- Stitching is white nylon thread for durability
- Four rows of stitching (except on style Nos. 110-120)
- Attractive, wear-resistant brushed suede
- Available in three colors
- Hand crafted by professionals

**STYLE 110**  
• 4" Back Tapered to 2 1/2" Front  
• 2 1/2" Single Tongue  
• Heavy-Duty Buckle  
\$22.00

**STYLE 120**  
(Natural Leather) Brown Only  
• 4" Back and Front  
• Heavy-Duty Buckle  
\$25.95

**STYLE 210**  
• Back Tapered To 2 1/2" Front  
• 2 1/2" Single Tongue  
• Heavy-Duty Buckle  
\$32.95

**STYLE 220**  
• Brushed Suede Outside  
• Heavy-Duty Buckle  
(Diamond Stitching \$2.00 EXTRA)  
\$35.95

**STYLE 320**  
• 4" Back & Front  
• Heavy-Duty Double Tongue Buckle  
• Brushed Suede Inside & Out  
(Diamond Stitching \$2.00 EXTRA)  
\$39.95

320

# High Performance Products from Mike MacDonald

## LIVER (Argentine Beef) 23 grain Tablets

Liver is one of the most nutritional foods known to man. It is a blood builder, energy builder, stress eliminator & detoxifying agent.

- 400 tabs \$11.50 + \$2 handling
- 800 tabs \$21.50 + \$2 handling
- 1200 tabs \$31.00 + \$2 handling
- 1600 tabs \$40.50 + \$2 handling

## Go Natural Have a Long Career

- Ultimate Nutrition Brand
- Full Spectrum Amino Acids
- 1400 mg. per tablet
- Source: Egg and beef.

## Super New Formula FREEZE DRIED Anabolic Glandulars

2 tablets contain the following glands:

- \*Whole pituitary... 300 mg.
- \*Orchic (testicle)... 300 mg.
- \*Adrenal... 300 mg.
- \*Thymus... 300 mg.
- \*Kidney... 300 mg.
- \*Heart... 300 mg.
- \*Pancreas... 300 mg.
- \*Spleen... 300 mg.
- \*Beef Peptone... 600 mg.

- 100 tabs \$12.00 1000 tabs \$37.50
- 300 tabs \$33.00 2000 tabs 185.00
- 500 tabs \$52.50

## MUSCLE FUEL The Ultimate Carbohydrate

Formulated from grains & tastes good, mixes easily without a blender.

- 2.2 lb. can \$11.00 + \$2 handling
- 4.4 lb. can \$21.50 + \$2 handling
- 8.8 lb. can \$41.50 + \$2 handling

## ORCHIC (Raw Testicle Gland) 500 mg. Tablets

We have a SUPER NEW PRICE on this very popular product. It is very effective in increasing strength and development of muscles.

### CHECK THIS PRICE: (500 mg. tablets)

- 100 tabs \$ 9.00 + \$2 handling
- 200 tabs \$17.00 + \$2 handling
- 300 tabs \$25.00 + \$2 handling
- 500 tabs \$39.00 + \$2 handling
- 1000 tabs \$75.00 handling free

## Super New Product POWER AMINO ACIDS

HGH (Human Growth Hormone) which burns fat and builds muscle and is stored in the pituitary gland. This amazing hormone which will create a super strong and hard cut muscular body, is activated and released by the natural amino acid formula below. For the best natural gains ever, take this amazing formula best at bedtime, for maximum results.

- 3 chewable tablets provide: 1500 mg. Tyrosine, 1500 mg. Ornithine, 1500 mg. L-Lysine

- 100 tabs \$15.00 + \$2 postage
- 200 tabs \$25.00 + \$2 postage
- 300 tabs \$35.00 + \$2 postage
- 500 tabs \$60.00 postpaid
- 1000 tabs \$115.00 postpaid

## Competitive Edge PROTEIN POWDER

Egg & milk, aprirullins, electrolytes & digestive enzymes.

- 1.1 lb. can \$11.50 + \$2 handling
- 2.2 lb. can \$19.00 + \$2 handling
- 4.4 lb. can \$36.50 + \$2 handling

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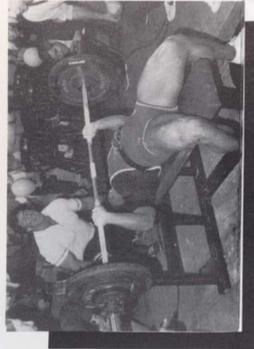
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Please indicate size or include relaxed measures of shoulders, chest, arm

Colors:  Black  Navy blue

Please rush me Inzer Blast Shirt(s) \$36. Save \$10. Buy 2 for \$62. (Limited time offer)

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