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STRONGMAN TRAINING
A COMPLEX MATHEMATICAL PROBLEM – Part 1
By Mike Westerling

I always joke with my athletes that training them is like a complex math problem because you need to balance recovery with total work load.

If you have the athlete do too much they get over-trained or worse, injured. If you have them do too little you end up leaving out certain events and don't get a well rounded athlete. This is especially problematic with the pro's who typically have 2 day contests with 7-8 events with a couple of them being 2-3 event medleys. So now they have to be proficient at 10-12 different events at different rep ranges and different time domains.

Gone are the days when an athlete could be pretty strong and in super condition and get by an athletic talent alone. The weights have become frighteningly heavy and amateur lightweights are routinely asked to handle weights heavier than those seen at "Worlds Strongest Man" just a few years ago.

Now, 900lb yokes are common in medleys and a 400lb log press barely raises an eyebrow!

Don't Get me wrong, this is great for the fans and makes for some cool looking tv! But the problem is it beats the athletes to hell and injuries are becoming more commonplace within the sport.

Barely a contest weekend goes by without someone posting about a bicep injury in the current strength scene.

I believe the biggest problem is that "Strongman Training" is still in it's infancy. Even though it's been around quite a while now, the beginning competitors basically trained with weights and showed up at the contests to let the chips fall where they may.Then Jouko Ahola came along and swept the strongman world by being the first athlete to actually train the events. Most other competitors jumped on the bandwagon and some stellar performances occurred.

This worked great for quite a while as the weights where manageable and could be recovered from fairly easily if the athlete didn't get too crazy with the volume. Jesse Marunde proved

volume training with manageable weights multiple times a day was a good way to get to the top of the heap quickly.

This also worked great as technique and conditioning would improve provided the weights stayed “manageable”. However, show weights are no longer “manageable.” Everyone except a select few have fallen prey to the dreaded bicep injury, even Big Z and the mighty Brian Shaw.

Strongman training, like all training, has been largely derived from other strength sports with the top competitors coming from Power lifting, Olympic Weightlifting, Throwing and Highland Games. These disciplines are for the most part where their base was built and their training rightfully reflects their background.

Most competitors follow their base training methods with an extra day thrown in to practice the events or just switch their events in for like exercises in their normal routine. With the success seen by their peers it’s hard to argue with results and so they figure this must be the best way to train.

Or is it?

In the beginning great results are had just by learning the movements. Especially if the newbie has a good solid base of strength off which to build. As the weights get heavier the stress on the body increases and is harder to recover from.

The athlete usually pushes on figuring “If X got me here; X will get me to the next level, I just gotta work harder”.

If the athlete has great genetics, a good head on their shoulders, and a little bit of luck this will carry them to the next level. At some point though, 400lb overheads, 900lb yokes, 1000lb tires and 400lb stones become constant fixtures in ones workout. The body eventually cannot handle the stress and something gives.

Is it any wonder a bicep tears when it’s been subjected to explosive contractions under bone crushing weights applied at odd angles for years in and years out?

Now I know everyone will cite their favorite power lifter and how much he squats or their favorite Olympic lifter and how much training volume it takes to be an Olympian. The problem with this argument is two fold:

#1 Powerlifting and Olympic lifting are both very controllable sports with standardized weights and equipment. Their bars and weights and lifting areas are largely the same and only vary by a few lbs or a couple millimeters here and there.

Strongman implements are by nature vastly different weights, measurements and the events are often times done on uneven, unforgiving surfaces.

#2 Powerlifting only has 3 lifts and Olympic Lifting 2 lifts and both only one rep range that need to be focused on and improved. Assistance work is geared toward filling in weak points and most is light in comparison to the lifts themselves and fairly easily recovered from.

Strongmen must be proficient at maybe 15 different events and could be asked to do any weight, reps or combination at any given time. To top it off, events and implements are routinely changed at the last minute giving the athletes no time to prepare specifically for them.

How does one be prepared for such chaos?

Everything must be trained!

Athletes need to be super strong overhead pressers but even that's not enough because just being good with the bar doesn't guarantee proficiency with the log, axle, circus bell, block or on the viking press! They must be able to walk with 2 to 4 times their body weight and may be asked to carry it in their arms, on their backs or in their hands. They must be able to pull or push giant trucks, load fire hydrants, stones, kegs, river rocks, sandbags, blocks and who knows what else a creative promoter will come up with?!?!?!

To really add insult to injury at the back breaking weights they are now asked to lift there is a specific technique needed to successfully accomplish each one, so everything must be trained!

To tie it all up in a pretty bow, these athletes better be able to do it at any weight or in any time frame someone decides would be "cool for the fans".

So, the question becomes: "How does an athlete train for all these variables and stay healthy long enough to get good at all of them?"

In PART 2 I will outline what I have my athletes doing and why I set things up the way I do.

STRONGMAN TRAINING: A COMPLEX MATHEMATICAL PROBLEM – Part 2

By Mike Westerling

So, here's the reader's digest version of part one: The strongman has to train for a ton of different hugely stressful events and time domains but only has a limited amount of recovery ability. The question becomes: how does an athlete train for all the possible events and variables needed to be successful at strongman without burning the body down to a pile of ash in the process?

NUMBER ONE: The athlete needs to realize it is a lengthy process.

Like any sport it will take years to master. Even the great Benedikt Magnussen and Brian Siders, arguably two of the strongest people that have ever lived, found that a 1000lb deadlift or a world record powerlifting total doesn't automatically equal success in strongman. Throw an event or two they haven't had suitable time to practice at them and they drop behind guys that are 200lbs below their deadlift. Each event has it's own technique and they each take time to master. However, in order to master an event the volume must be increased so it can be practiced and with an increase in volume comes an increase in stress.

Unlike Olympic weightlifting, where correct technique can be practiced with a broom stick, strongman events can't really be practiced with light weights either. A light to medium weight will allow almost perfect technique but crank up the weight just a hair and all of a sudden your body angle and center of gravity ends up changing drastically. Take a world champion oly guy and watch him warm up with the empty bar and hit a new PR and if you couldn't see the plates you wouldn't know it's a different weight. Watch a guy warm up with the empty log and he looks like a world champ. Put 90% of his max on it and he's bent over backwards doing the limbo trying to keep his elbows up and support the weight as it crushes his lungs.

Strongman events beat you down so the volume must be kept to a minimum if the athlete wants to have any energy left over to use enough weight to continually grow and get stronger. This means you can either focus on one lift at a time for a training cycle till you get good at it then do just enough to keep it while focusing on the next lift until you have repeated this process enough times till your good at all of them. Or it involves rotating through each of them and getting good at each of them at a slightly slower rate but bringing them all up to the same level.

Either way will work although the second way will result in a more evenly developed athlete with less chance of burn out and overuse injuries from repetitive movement patterns. Also, the second way will allow the athlete to compete sooner because he (or she) will be have better GPP (general physical preparedness) and will be better prepared for events that may pop up or change at the last minute.

NUMBER TWO: The athlete must realize that in the sport of strongman strength is his or her most valuable commodity.

In the short term progress will be much faster through learning technique BUT once technique is sound the determining factor to one's ultimate potential will be strength. To gain strength one must be able to consistently use heavier weights. This cannot happen if your always too tired from last workout to be at your best weights for this one. Or if you have bad knees that don't allow you to practice jerks or a hurt back that won't let you pull big weights.

Most injuries start as a small annoying tendonitis type aggravation due to repetitive movement and eventually weaken the joint or tissue till it gives. Then the athlete will have to rehab that injury, get over the constant fear of having it come back, and be ever mindful that they don't do it

again. Doctors now are saying in MRI's they can see that the type of collagen that the body uses to repair tears in a highly androgenic environment with is inferior to the collagen the tendon had originally. So if a guy keeps getting small tendon tears during certain training cycles eventually the repaired tissue may be weaker than the original. Over time this can, and most likely will, lead to a total rupture of the tendon. Obviously the best way to combat this is to keep tendons healthy in the first place by keeping the wear and tear to a minimum.

Every athlete will experience the urge to do too much. Usually it's "Holy crap did you see they are going to have Circus Bell at the show coming up!?!?!?! I need to start practicing the hell out of that!!!!" The circus bell is a cruel mistress and will wreak havoc on your shoulder and any one of a bunch of different muscles in your core if you aren't careful to condition the body to it slowly and build up your weights gradually only as your technique becomes better and better.

"What if the event is for reps with my current max?!?!" you say? Then train it like you would any lift you're trying to get stronger at and hope for a double or a triple at show time. You don't see powerlifters triple their volume on their bench coming into a meet because they heard Vinnie Discenzo is going to be there! They train correctly to increase their best as they have been all along.

That's where training all the lifts year round on a rotating basis and constantly trying to get stronger comes in. That way every muscle is strong and conditioned and if you have to throw a few extra sets in to peak on something it's a no brainer. Also, if the event changes last minute (like it always seems to) the strength will carry you through while everyone else is bitching about having trained specifically for the original event.

A lot of guys think strict pressing will hurt their jerk technique and they may be right to a certain extent. However, the added shoulder horse power will more than make up for it when the promoter switches the axle press to a block press at the last minute or the log is a different diameter with a different center of gravity. It will still suck and both will be off a bit but the difference in performance will be less in the guy with the brute strength than the guy with the picture perfect technique.

NUMBER THREE: It's better to do too little than too much.

When I was in college I went skiing in Vermont one weekend. We skied all day long like maniacs! It was getting dark and cold and we were totally burnt out, but we we're men and had to do one last run to make sure we got our money's worth! I separated my left AC joint on that run and had to take off 6 weeks to slowly rehab it back. The doc told me I would never press heavy again. Thankfully, he was an idiot and I was back to 100% by the summertime BUT it still would have been better to do too little!

You can always do a bit more next time and you will have extra energy to do it with. I try and use that analogy to drive home the point that "one more set" isn't always the best way to train even though it's the most manly! When I first started training Marshall White he told me he took great

pride in being able to work anyone into the ground and maintain his top weights for set after set. This is prevalent in most training circles as workouts become a battle of attrition to see who's the toughest of the day instead of looking at the long term and doing what it takes to be the strongest in a year. Then athletes become stagnant or worse because they become too short sighted.

The strongest guys and girls in the world have a plan and follow it and keep the big picture in mind so they will slowly build week in and week out. They don't give in to ego and end up having crappy training week after crappy training week trying to recover from Saturdays "events with the guys". Think about it: Last time you got badly hurt it was probably on the last set of the day. If you had done too little you wouldn't have gotten hurt and could've slowly gained over those next 6-12 weeks instead of rest and rehab right?

If we think logically about exercise theory and discard all the mysterious programs that involve multiple sets at different volumes and intensities weekly we can use "Arkhams Razor" as the scientists would say to cut through all the BS out there that was developed to sell magazines. Now I know some will say "but the oly guys train 3 times a day, 7 days a week and max out every workout". I know this is true BUT there's quite a few reasons they can get away with this: Oly lifts are very technical and since the load, when done correctly, is distributed very evenly across the body no muscle is really stressed or broken down in the way say the biceps would be in a tire flip, or the lower back in a max deadlift. Also the load is moved very quickly and if a lift is missed it's not missed through muscular failure, it's missed through technical failure. Also, there is no negative component and muscles aren't stressed by slow grinding reps like in a max deadlift. Combine that with the fact that the loads used for most of the workouts are very manageable to the athletes. The technical aspect of the lift requires constant practice as technique becomes just as important as strength. Maybe more!

In strongman technique is very important also but, unlike oly lifting where bars, plate size and weights are standardized to the millimeter and gram, the implements vary so much that becoming perfectly efficient with say a tire flip will go out the window when you get to a show and the treads are different or it's taller, shorter, or heavier than the one you been using and you can't get that perfect body angle you've been using to flip your 900-pounder like a cheerio. In that case you would be better having decent tire technique but being totally fresh, brutally strong and in great condition than slightly tired from all the practice you've been doing to perfect your technique.

So, to develop strength and muscle we stress the body enough to trigger the growth response and rest and feed it properly so the body can do its thing. Train too much and the body can't recover and grow. Eat too little and it won't have the building blocks it needs to rebuild never mind grow!

I told super deadlifter Vince Urbank, to eat well when he told me he was heading to a buffet the other day, he said "There's no point in training if you don't" Well said Vince! I couldn't agree more. Incidently, Vince only trains 2 to 3 days per week max, keeps his volume to the bare

minimum and is about as big and strong as one could ever hope to be. I'm not claiming to take credit for Vince's training, as I just started working with him, but it is interesting our methods are so similar. Most guys come to me and bitch about how much I cut them back. Vince actually said he was worried about recovering because I upped his volume so much! The difference here is Vince is already ridiculously strong and just needs to refine his overhead technique a bit so we are adding some volume so he can get more practice and improve his timing.

Ok so enough theory, time for the nuts and bolts! Let's start with the basic split.

TRAINING SPLIT

For the most part I have my athletes train 3 times a week on one of 2 basic splits. Which one we use depends on whether we are focusing on pure strength, pure event strength, or peaking for a show. It also depends on if the athlete has access to events and gym stuff at all times or only on certain days of the week. Of course other variables are considered such as work schedule, etc.

SPLIT ONE:

Monday

- Overhead Pressing
- Pull up or pulldown type movement (basically the opposite of pressing overhead) Chest pressing type movement (any type of bench press or pushup)
- Rowing movement (the opposite of the pushing movement they just did)

Wednesday

- Squat or deadlift type movement
- Deadlift or squat type event
- Situps or some type of back extension

Friday

- Conditioning with sled/sandbags/vehicle push etc.

SPLIT TWO:

Monday

- Overhead
- Pullup/Pulldown
- Bench/pushup
- Row

Wednesday

- Squat or Deadlift
- Situp or back ext

Friday

- One event alternating between yoke/stone/farmers/tire

On the above splits pulldowns, rows, situps, back exts or whatever assistance exercises we decide the athlete needs are dropped on weeks that have events that are extremely taxing to the muscles worked in them. For example situps are going to be dropped to allow the core to be fresh and strong if we're hitting yoke. Pulldowns and rows will be dropped on weeks tire or stones will be attacked.

EXERCISE CHOICE AND FREQUENCY

This will depend a lot on what the athlete needs to work on and their level of development and how much they rely on technique vs strength on their lifts. Obviously a beginner will need to hit an exercise more frequently to progress at it, whereas an advanced athlete who already is technically proficient at many exercises will be able to rotate through many different variations keeping stimulus fresh and movement patterns from becoming over worked.

Style of pressing will also be a factor: For example a guy that's a split or power jerker may have to hit overhead more often to keep his technique crisp. A guy who relies on pure strength to muscle up huge poundages is going to train less frequenty to keep his shoulders strong and fresh for pressing. The most successful athlete is going to be the one that can keep his jerk technique with relatively little practice so he can reserve the extra energy for growth. Unfortunately this is very rare and most will fall into one or the other.

Overhead Press: Typically I will have athletes rotate 3 different overheads each week. Axle, Log and Barbell for example. If there is a Viking press coming up we will take out the stronger of the 3 and rotate Viking in. If the athlete really needs to work on it we may do it every other week or even every week in some cases. For the most part this is a mistake though as 3 weeks in a row on an event leads to a decrease in performance if not very carefully planned.

Deadlift/Squat: Typically one week will be a deadlift variation and the next a squat variation. Again, a lot depends on how proficient an athlete is at each variation as to how much variety we can get in. Typically we'll rotate Squat/Rack pull/Front squat/deadlift. If an athlete needs special work on the hips we may do Sumo in place of rack pull or if the athlete is technically proficient in all forms of squat and deadlift we may rotate 6 exercises such as: oly squat/deadlift/highbar squat/sumo deadlift/box squat/rack pull

Events: In an effort not to overlap too many movements yoke will be placed on weeks that deadlift is the main exercise and farmers will be on weeks with squat as the main exercise. Stones will go with squats and tire may end up with either depending on a variety of factors.

Conditioning: Depending on the level of conditioning needed and the current goal of the training cycle it could be a variety of carrying, dragging and pushing with short rest periods and insignificant weights that only make the workout hard because of the pace. The goal being to get the athlete used to pushing through periods of oxygen depletion and extreme cardio exhaustion. I've had a couple guys play with wearing a gas mask for sled drags to really tax the heart and lungs with a weight that wouldn't cut into recovery of the main strength lifts. I am still unsure as to whether or not we will persue this regularly in training or not.

SET AND REP SCHEMES

Main Lifts: For the more technical basic lifts like pushpress, power jerk, split jerk, cleans, snatch along with some of the bigger lifts that also rely on correct mechanics like squat, deadlift, bench, etc. I like a 3 workout wave. So, using log as an example, first time through the rotation I may have the athlete start with the empty bar for triples taking 30lb jumps up to their top triple. When they don't think they'll hit the next set they're supposed to stop. Using their final number for that day as a gauge we will plan the next time through. If the athlete hits 345×3 and thinks they would've missed 375 for 3 they will stop there.

Now, next workout we know the athlete should be good for 350 double so we start with 50lbs instead of the empty bar and do doubles taking 20lb jumps up to 350 even though there will be more total sets, each set has one less rep so the cumulative fatigue will be the same if not less. However, if they did all there sets last time through as they should've, their technique will have improved and they should be a little more prepared for the volume working up. Typically they will hit the 350×2 no problem and then 370×2 as well. Maybe even 390×2 if the stars line up.

Next time through we will hit all singles for maybe 30lb jumps again so now the top number will be hit with relatively little fatigue and they will be allowed to take smaller jumps to achieve a true 1RM on this day. As the weeks go by and technique improves we will repeat similar waves using bigger jumps and less fatigue.

The goal always being first time through more practice and artificially low final set as sort of a deload from last training cycle. Second time through heavier weight, getting used to more volume and more weight. Third time through a PR single. Finally in the peaking cycle we will go through the waves with bigger jumps calculated to allow a PR triple first time, PR double next time, then finally a PR single before starting the precontest deload. Now if you figure out each time you hit the lift it's about every 3rd week and you go through 3 waves to achieve a peak we see it's a long term plan, not a quick fix.

Assistance Exercises: It's my belief that isolation exercises rarely, if ever should find their way into an athlete's program. That's not to say theres not a place for them BUT the goal of any athlete is to become more efficient at using their body as a unit to find the mos efficient way of getting the task at hand done. Why practice the opposite of that. I won't use the argument that

bodybuilders aren't strong here, they are. I've trained and trained with quite a few of them and some or them are ridiculously strong.

However, isolation exercises, like kurls for example, are teaching the body how to use the biceps as the prime mover. What do you think will happen if your brain happens to try and recruit the biceps to help out with a max deadlift? Again I won't say kurls are useless but I don't see how you are going to stress your biceps harder with a kurl than a 400lb stone load, arm over arm truck pull, max log clean or even bodyweight pullups? Since your body adapts to the most stressful thing it does, not the thing it does the most, all you are doing by adding in kurls is cutting down on recovery ability and creating extra wear and tear on the tendons.

I know there are a lot of prehab and rehab exercises out there that are now popular like face pulls for example, and lots of great lifters swear by them. However, most powerlifters aren't flipping tires, cleaning logs, loading stones, etc., and need to fill in the holes by making sure all their muscles get worked. Strongmen have more lifts to concentrate on and most events stress the body and system as a whole so there are very few "holes" left to fill in.

This isn't a knock on powerlifters by the way. It would be foolish for most to incorporate a bunch of events (except to address a certain weakness) because it would cut into their recovery ability and slow down the specific adaptaitons they are after in their training. All that being said, assistance work should be limited to what's NEEDED. Not what sounds fun or is done by someone you would like to be like.

Let's use rows as an example as an assistance exercise to be used on the weeks we aren't hitting heavy log, stone, tire etc. I would have the athlete do a few warm up sets then go all out on one set of at least 12 to 15 reps the first time through. The next time through add 5-10lbs AND try and beat last time's reps. Why so many reps? Because the athlete should be able to add weight to that rep range for quite a few weeks before the reps drop much. Also, the higher reps afford a bit more practice since the sets are low and afford a little more wiggle room if the wrong weight is picked the reps may be as low as 10 or as high as 25 then next time through we either take a bigger jump than normal or slightly smaller than normal so we can generate some "forward momentum" and get the weight moving up.

In the beginning it's not uncommon to have an athlete hit 220×14 on the first week and next time hit 225×18. As the weeks and months go by the reps will slowly drop as the weight increases but they will be at a much heavier weight for 5 reps. Rows and pullups (or pulldowns if the athlete can't do pullups) are great assistance exercises because they teach the athlete to pull witht the bigger muscles first. In a good powerful barbell row for example the correct sequence of events would be hip lower back contraction, upper back contraction and finish with the arms. Pullups would be a tightening of the core, contraction of the upper back to start the pull towards the bar, finishing with the arms.

These exercises do not violate the "core to extremity" movement pattern needed to be successful at athletics. Even lat pulldowns would be initiated by a slight hip thrust if one wants

the movement to follow correct sequencing and become relevant to athletic performance. Now if an athlete has a shoulder injury for example, that won't allow movement of that joint under load it may be that bicep kurls and tricep extensions are warranted to keep as many muscles as possible strong while healing. However, once the athlete is capable of performing the bigger moves with appreciable weight smaller moves should be dropped in favor of more efficient multi joint movements.

Event Training: For the most part event training should be done as it will be seen in shows: one all out set. If you need practice do short work up sets focusing on technique but not allowing fatigue to set in. Then on your top set go all out, time it and try and beat it by just a bit each time. Using Yoke as an example: 300x25ft 400x25ft 500x25ft 600x25ft 700x25ft 800x25ft 900xmax distance. Each of the 25ft sets should be practiced the way a top set would be performed.

This is your chance to work on pickup, take off, speed and making the mental connection with what your body is doing. The last set could be for max distance, a set distance trying to beat time, a set distance to beat weight or all of the above by taking the 900 for a ride, have your partner time how long it takes you to get 50ft and keep going as far as you can. The advantage of this is you always know if you're getting faster, you're constantly trying to move bigger weights and you're learning how to suffer for longer periods.

There are many ways to train the techniques but for the most part in a show you get one all out try at it and you're done. So why no train that way? Get used to putting all-out effort in to each event. This will help conditioning as well. Also, unless a specific show is on the horizon it's probably best to train yoke, farmers, stones, husafell and tire because being strong at these movements pretty much will allow you to be good at everything and they are the most common. If you're a beast stone loader and can carry a 1200lb yoke you probably won't have much trouble carrying a 300lb sand bag as long as your conditioning is good. Hitting a front carry once a month is also a good idea.

This is how it became a complex math problem. How do we get all those variables together, hit everything often enough to get better at it and train infrequently enough to allow recovery and growth? This becomes increasingly problematic when new events are introduced or an athlete is coming off an injury where one or more of the events have been neglected for an extended period.

Hopefully I have helped answer some of those questions and given athletes a template to build from. Above all keep a log book and be mindful of what you are trying to accomplish with your training. Understand how each event affects the other and come to know your body and how it will respond to what you're doing and the days following. Don't be surprised if hitting a max yoke takes away from your max log 2 days later or if your shoulders got over-trained from going too heavy on a day designed to allow overhead practice.

The numbers don’t lie. If you’re getting stronger, moving faster, feeling less beat up after doing the same amount of work your physiology is moving in the right direction. If your numbers haven’t moved in months or you’ve regressed, don’t kid yourself into believing some big gain is right around the corner you just “gotta stick it out”. Also, if you’re toiling away with 70% weights for months in and months out don’t expect to hit a new PR without a well thought out build up phase.

I also would like to add I don’t claim to be anything special and I’m kind of embarrassed by the “Guru of grow” thing-lol! I’m just a guy that’s been training people for a long time trying to apply logic and a lifetime of being around strength sport to help people stay healthy and become their best. I haven’t invented any of this I’m just trying to put it into an equation that makes sense.