

Mensh's Workout Types



Chantilly Chargers Cross-Country 2016

"Training is a case of stress management. . .stress and rest stress and rest "

Brooks Johnson

Dear Chargers,

Please take the time to read this packet, describing not just what the different types of running we do, but also the purpose behind each type of workout, and the benefits of them. It is so important to understand the progression that we undertake to build and rebuild our bodies into competitive running machines, designed to contribute to our ultimate team success that is cross country.

I do want to give proper credit to the author of this package. This packet was written and compiled by Hall of Fame Coach Barry Mensh, who was my coach when I was at George C. Marshall HS, and who has recently coached the Robert E. Lee Lancers. Please note that many of the philosophies that I employ today were from lessons learned decades ago, and which have been used to produce numerous district, regional and state champions. We agree on many things, most prominently that there are no short-cuts to becoming a strong distance runner, and that your efforts towards individual improvement should be undertaken with the knowledge and commitment towards ultimate team success.

You have earned my respect for starting this journey...and will continue to earn it as you train for cross country. I hope this tool aids you in building yourself, and CHANTILLY CHARGER CROSS COUNTRY into champions.

Dr. Gilchrist

The following workout types are but a fraction of those you'll see from your coaches this season. They are, however, the foundational workouts that we will include not only in your summer workout schedule, but throughout what promises to be an extraordinary season. The "basics of execution" are included below. . . . a "few" sample workouts follow on the next pages.

I. Long Slow Distance ("LSD")-

easy, comfortable runs at approximately 65-80% of your maximum heartrate, which is approximately equal to 1:30 to 2 minutes slower than your current 5K race pace ... I call this "date pace" ... it reflects your current fitness level! e.g., if you run a 17 minute 5K* (which is approximately a 5:30/mile pace), your LSD pace should be between 7 and 8 minutes/mile.... if you run 22 minutes for 5K, a bit over a 7 minute/mile, then your LSD pace would be between 8:30 and 9 minutes/mile, or so! *5K = 5000 meters, or 3.1 miles, the "standard" cross-country race distance

Major benefits of LSD include (but are not limited to ...).

- A. Increased muscle capillary size and density (biology review!!!).
- B. Increased size & number of mitochondria per cell (biology review!!!).
- C. Increased red blood cell and hemoglobin concentration, as well as overall blood volume (another biology review!!)
- D. Increases muscle's ability to extract oxygen from the blood.
- E. Enhances muscle's ability to store carbohydrate and utilize fat as "fuel."

"The long run is what puts the tiger in the cat. "

- Bill Squires

This is the fundamental workout during the "onset" of the base period in our training cycle when you are trying to develop a distance base and acclimate your cardiovascular system and muscles to distance running. I highly recommend that LSD be done over regular HILLY training courses ... Among my very favorite quotes as they pertain to incorporating HILLS into not only LSD, but ALL distance workouts are by two of the world's greatest distance runners, Frank Shorter and Eamonn Coghlan, who said, respectively:

"Hills are speedwork in disguise. "

- Frank Shorter

"Running hills breaks up your rhythm and forces your muscles to adapt to new stresses. The result? You become stronger. "

- Eamonn Coghlan

Now, on to HILLS...

II HILLS

-hard runs up a hill(designated number of repeats) or over "repetitively-hilly terrain, with an easy jog down for recovery has huge benefits.... the best teams(and individuals) with which I have worked over my 24 years of coaching were the strongest hill-running teams ... they grew to "love" hills to "want" hills...they even went so far as to ask me, rather, BEG me to enter them in hilly, or mountainous invitationals(meets/competitions). I recognize 2 types of hills, first, those which "I" refer to as POWER HILLS; they tend to be short, yet quite steep(grade > 45-50o).... often only 40-80meters, but real quad-burners! (*quads = quadriceps, the large muscles(3) in the front of your thighs that help extend/drive your legs!)..... the key to these types of hills are increased arm drive and higher knee lift/toe off, as well as enough forward body lean to keep your center-of-gravity perpendicular to the grade of the hill don't over-compensate! ... I'll demonstrate/explain in practice, or at our meeting!) ... POWER hills, in my opinion, are less important... just negotiate them!!!...(though still so) ... than STRENGTH hills these tend to be less steep(grade < 45o, usually 30-40), but much longer, often exceeding 300meters..... courses 'known' to be hilly tend to have a predominance of strength hills excellent strategic points in races, hills can be an enemy or ally! STRENGTH hills require the four key aspects of good "hill-running form", AND should be the primary type to be incorporated in not only your summer training, but in our early to mid-season training!!! The four aspects are:

a. Shorter, choppier steps striking the ground on the forefoot...

toe-ing off to achieve lift/spring.

b. Lean your body forward(but not too much) to a point where your center-of -gravity(as mentioned above) has positioned you relatively perpendicular to the grade/angle of the hill.

c. Increased arm swing your arms are "almost" as important as your legs in distance running, more-especially in hill-running.... for drive! d. Eyes should NOT be focused on the ground at your feet, NOR at the 'crest/top" of the hill, BUT about 10 or so meters ahead..... this will help position your body properly for the ascent relative to "b" above Incidentally, NEVER look at the runner in front's feet; you will be lured, rather, hypnotized into running his or her pace! You shouldn't try to run "faster" up the hills.... only to "maintain" your current pace, be it racing or training.

I also recommend "busting over the top" of the hillaccelerating 20-40meters past the crest ... In races, this will oftentimes destroy "trailing" opponents; in practice, it will "open the door" to the same you'll feel an upwelling of confidence and an enhanced level of "ownership" with respect to hills AND your fitness!

BENEFITS of HILLS:

1. Increased strength and power of quadriceps, calves, hip flexors, and gluteus maximus(yes, the 'butt!')muscles ... all vital in running!!! It will even strengthen your arm 'carriage'...the muscles and connective tissue thereto!
2. Improves 'running economy'(how much oxygen you use at a given pace; the less oxygen you use to maintain ANY given pace, the more economical you are as a runner! thus, you'll be faster and less fatigued!)
3. Builds CONFIDENCE!!! "P.M.A.", Positive Mental Attitude!!!!

III "TEMPO RUNS" a.k.a. Lactate* Threshold Runs

*Another biology lesson: recall that lactate, also known as lactic acid, is the molecule produced in skeletal muscle cells during intense activity(i.e. RUNNING!!) wherein the demand for oxygen is GREATER than the supply provided by our cardiovascular system. Lactate builds up in the muscles, creating 'pain'.... "soreness"...."burning"...."fatigue"...it lowers the pH in the muscle tissue which, consequently lowers the ability of the enzymes to catalyze the "contraction" reactions ... bottom line, it really hurts! It is the cause of the upper limits of human athletic performance.... WORLD RECORDS!

For "our" purposes, we NEED to push this limit in practice so we are better 'adapted' to deal with it in races hence, "TEMPO RUNS!" also a staple workout of the Kenyans, Ethiopians, Moroccans ... the great African distance runners, whom you will hear much, much more about this, and future years from US! (***as well as CHS team and individual champions!!!***)

These are "comfortably-hard"(huh?) threshold runs at 80-90% of your maximum heartrate, or about 30seconds/mile slower than your "current"(date-pace, again!) 5K race pace using previous examples, if you run 17 minutes for 5K, your "TEMPO-RUN" pace will be approximately, give or take depending upon the individual, 6:00min to 6:15/mile.... if you run 22 minutes for 5K, your TEMPO pace should be about 7:30-7:45/mile. They are typically run (by us, your coaches), over a prescribed time, usually anywhere from 10-25 minutes, depending upon both fitness level AND where we are in our seasonal training periodization.... For those of you logging "miles", TEMPO runs are usually run continuously for 3-4 miles(you'll note that we've tricked you a bit, as a 20-minute TEMPO, for example, for an 'average' runner will equal 2.5-3 miles!)..... Some coaches(I usually call these "repetition" intervals, or "mile repeats", if you will....) run these TEMPOS as 1 to 1.5 mile "repeats", with a MINIMUM recovery(rest) period between each repeat of 1 to 2 minutes no more!

THE MAJOR BENEFITS of these runs are to"

A. RAISE your lactate threshold, the intensity of exercise above which lactate("lactic acid"), and it's associated protons(hydrogen ions) begin to accumulate in your muscles and bloodstream. The higher your lactate threshold, the faster and farther you will be able to run BEFORE you fatigue!!!!

B. It "mentally", as well as "physically", accustoms your body to the inherent stresses of PACING! Your heart and blood vessels, along with your BRAIN(85% OF SUCCESSFUL DISTANCE RUNNING IS MENTAL!!!!!!)get toughened! You'll see!

IV "FARTLEK"

Yep, you heard it(not literally, as in flatulence!), but a word derived from the Swedish term, meaning, 'SPEED PLAY!'which is exactly what it is!

When Fartlek came along in Sweden in the 1930's it quickened training worldwide with new strides on new paths, innovative as any idea in athletics' history: Interval training, the Fosbury Flop.You name it, "Speed Play" is right up there.

1. That's "Fartlek" with a capital F, which is how Swedish national coach Gosta Holmer coined it when he pocketed the stopwatch and created something new for the downtrodden Swedish cross country teams which had been thrashed throughout the 1920's by Paavo Nurmi and the Finns. His concept: faster-than-race-pace, simultaneous speed/endurance training-speed play, in Swedish.Runners who Fartleked sped to world records in the two-mile, the indoor two-mile, the three-mile, the four-mile, the 5,000 and 10,000 meters. Nurmi's records in the 5K and 10K? Exceeded by 30 seconds! And, in the summer of '42, the most famous Fartleker of all-Gunder Hagg-set 10 world records in seven different events.

The Play is the Thing

Fartlek can be done in the woods or open country, on a beach or road, around a golf course and football field, up and down dunes or hills and/or over flat surfaces or on a track. Swift sprints, jogs and middle-distance bursts-mixed, quick changes of pace, that's the essence.

Woods, or "cross country" training was the original brainstorm of another Swede, Gosta Olander, and also the habit of the Swedish military in the far north. Predating Fartlek, it was simply long, slow base training over varied terrain.

High in the Northern Hemisphere,. Sweden has protracted summers and winters, brief autumns and springs-a calendar not exactly conducive to winter and pre-season outdoor conditioning. Without indoor tracks for speed work, the Swedes had to keep fit somehow. Gunder Hogg was known to clamber and glide and barrel like a maniac through ankle, knee and waist deep snow for hours. Necessity was no doubt part of Speed Play's genesis, and Holmer's inspiration.

Fleeter, Farther, Fatigue Free

Swedish Fartlek isn't carefree running. It's free running that conditions one's quickness as it builds stamina. It's training at high speed more often, training more continuously for a longer period than in interval or repetition speed work, training without fatigue by not forcing the body, slowing down at will, and by lengthening a workout.

A typical session for a world-class Swede: seven total miles of running with 4,000 or 5,000 meters worth of lickety-splits, from 40 meter sprints to upwards of 2,400 meter pick-ups. A three-to-five day week of Fartlek running was the norm. Holmer advised his runners to sometimes do in two hours what you could do in an hour-extending the recovery AND the workout. The Swedes usually did more faster-than-race-pace stuff in one day than their American contemporaries accomplished in a week. And-day for day-they trained farther and for longer, too.

It should be noted that the Swedes didn't build sustainable speed with Fartlek alone, however. Repeat track workouts, tempo runs and time trials were alternated or combined with Fartlek workouts throughout the week.

"Ask 10 people, 'What's Fartlek?' You should get 10 different answers," said Track and Field Hall of Famer Doris Brown Heritage. Her 1960's Fartlek consisted mainly of 20 minutes worth of totally unstructured 40 to 200-yard sprints and five to seven minute segment "perceived exertions," surrounded by mile runs. She ran around a flat lake loop, as well as along trails overlooking the West Coast surf.

Fartlek tied training together for Brown Heritage, year-round. Coaching at Seattle Pacific University, she still has her harriers do lots of short sprints, as well as five to seven minute runs during both cross country and track seasons.

"It was the one time I didn't have to do anything I was told. I just ran as I pleased," said Brown Heritage. "Freedom-that was Fartlek's appeal."

Freedom-that's also the appeal Fartlek had for Aussie Percy Cerutti, who coached with a specialized Fartlek in Portsea, at his idyllic, rough and tumble training resort on the Australian seashore in the 1950's and 60's. Adapted to the Australian coast, Cerutti's Speed Play was deeper and steeper. Cerutti workouts consisted of 20 percent beach running in heavy sand, 10 percent repetitions up dunes as high as 80 feet and as steeply graded as the stairs up the Statue of Liberty, and the remainder, Holmer-formula sprints, jogs and middle-distance runs along undulating cliff top paths, the seashore and dirt roads. Portsea also had a scraggly square track, over one mile around, with patches of deep sand, steep inclines of forty to fifty feet and roller coaster swells. Weekends of such training-completely free of structured track work-comprised six months of the Aussies' schedule.

"In the early fifties, Cerutti was regarded as a nut," said Joe Schatzle, Sr., who competed at European meets during Cerutti's era. "He was into health food and yoga ... and nobody ever did 40 repeats up steep dunes before. Even today, who does that! Part of coaching's biggest challenge is to make training fun and instill the drive to run. Cerruty...took training to places no one ever thought of before-and few have thought about since."

Variations on a Theme

Joe Rogers, assistant track coach at U.S. Military Academy at West Point and former head cross country coach at Ball State University, has used Fartlek extensively in his 35-year career. "Early myths about LSD (Long Slow Distance) are the worst thing to ever happen to distance running in America," he said. Rogers points out that Lydiard's early 60's runners of LSD-trained fame used Fartlek and interval training.

Lydiard copied Holmer's ideas, creating Fartlek courses over both flat and varied trails with distance markers set at various sprint and middle-distance speed changes. "The Swedes used Fartlek on pine needle forest trails," said Rogers.

"There was terrain training, and hilly Fartlek courses. But, primarily, it was on level paths." According to Rogers, Lydiard used both types. On the flats, athletes changed paces at markers. The hill courses had built-in stressors.

Rogers calls Fartlek the most variable workout. All of the energy systems can be addressed. For true speed, a run should last no longer than five to eight seconds. For lactate tolerance, 40 seconds to two minutes. For lactate threshold running, three minutes or longer. An aerobic effect results from the duration and the interplay of short/long bursts. "Training the aerobic system to keep working after taxing the anaerobic is excellent Fartlek," said Rogers. In a workout, that translates to sprinting for a short distance and then holding a fast pace for a middle distance, recovering and repeating.

Swedish Fartlek was created for world-class athletes, but Holmer's speed play is a principle within which anyone can structure a suitable workout. Thus introduced, runners are free to freewheel it as they like, deciding for themselves what improves the workout—where to push harder, where to back off. The idea was revolutionary in Holmer's era, and is still the most accessible, most fun, and most thorough speed workout today: coach-free, instinctual training, combinations of sprints and middle distances, and infinite variations.

Remember, Fartlek runs are the manifestation of our own "creativity", as well as our training goals, both short and long-term (to be discussed later!)..... Usually covering between 2 and 8 miles, Fartlek runs VARY IN DISTANCE, INTENSITIES, and RECOVERY PERIODS WITHIN THE SAME WORKOUT!!! You can run hard for prescribed distances for prescribed intensities for prescribed numbers of repeats in ANY format you choose create them as you go!!!..... Just decide on the "total number of hard minutes/miles beforehand, or, if you wish, DURING as you feel! You can pick a certain number of telephone poles to run hard, or light posts, or mail boxes, or dead squirrels the "world's the limit!"

KEY BENEFITS of FARTLEK:

- a. Your body learns different paces, and to adjust TO them!
- b. Brings variety and fun, less monotony to your training!
- c. Oh yeah you'll get fitter and faster too!!!

V INTERVALS!!!

Intervals incorporate two basic components, a "work", or "hard" phase, followed by a "rest", or "recovery" phase the numbers, intensities, and distances vary according to MANY factors, including: point in the competitive season, goals, fitness levels of athletes, injuries (we'll try very, very hard to avoid these, but they, on occasion, do happen!) There are two basic category-types of intervals:

1. AEROBIC Intervals- hard runs of 2-8 minutes at 95-99% of maximum heartbeat (*You'll notice that I'll never tell an athlete to run 100% in practice more on this philosophical idiosyncrasy of mine later!) ... which will be your current ("date") 5K race pace or 'slightly faster!' please note we're talking about a 5K race pace, NOT your MILE pace!!!.... this being interspersed with recovery periods. The recovery periods are equal-to or slightly less than the "work" interval, or period running 'hard, at or near your 5K pace! The major benefit of AEROBIC Intervals is an increase in the maximum amount of oxygen your muscles can consume, a.k.a. V02max!

This type of interval is usually introduced by us relatively early in the season, after "Fartlek" and a few "Tempos" have been tackled successfully! This is accomplished by:

- a. an increase in the size of your heart's LEFT VENTRICLE, the main "pumping chamber" of the systemic circulation, delivering blood to each and every of the 100trillion cells of the body, including your "running muscles!"
- b. an increase in the amount of blood pumped OUT of the LEFT VENTRICLE with each heartbeat, a.k.a. the "stroke volume!"
- c. an increase in the amount of blood pumped OUT of the LEFT VENTRICLE in each minute, a.k.a. the "cardiac output!"
- d. an increase in the blood's return to the heart, a.k.a. "venous return!"
- e. an increase in the heart's ability to contract more forcefully, a.k.a. "contractability".
- f. creating a fitter, faster, Charger harrier!What's there not to like?

2. ANAEROBIC INTERVALS-very hard runs of between :30seconds and 2 minutes interspersed with recovery periods. The duration of of the recovery periods are typically 1.5 to 2 x's as long as the "work" period! This type of interval is typically introduced mid to late-season, especially during what "we coaches" call the "peaking" period, that crucial time when we try to prepare you to be at your highest level of fitness, both mentally and physically. This occurs just before District, Regional, and State Championships the 'real reasons" we train so doggoned hard!

BENEFITS of ANAEROBIC INTERVALS include, but are certainly not limited to:

a. increase in speed by recruiting what are known as "fast-twitch" muscle fibers.... these respond rapidly AND usually under anaerobic(low oxygen!)/high stress/over-threshold conditions.

b. increased ability of your muscles to be able to tolerate and *buff er"(resist great changes in pH) muscle acidosis, a.k.a. "lotsa lactate"(a Menshism!)!!!

“HOW CAN WE/YOU MAXIMIZE ALL OF THE ABOVE INFORMATION, SO THAT YOU GROW INTO A CONFIDENT, SKILLED CHARGER CROSSCOUNTRY RUNNER?.....

First and FOREMOST: Follow your Coach's SUMMER WORKOUT SCHEDULE TO THE BEST OF YOUR ABILITIES!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!...This is a "no-brainer" ...you do it, and you'll succeed ... you don't, and you need not bother joining us in the Fall!

Remember:

On Training

"Few of us know what we are capable of doing... we have never pushed ourselves hard enough to find out.- Alfred A. Montapert

"There is no such thing as bad weather, just soft people. " - Bill Bowerman

"Each day you don't practice is one more day you have to practice to get better. "

"The will to win means nothing without the will to prepare. " - Juma Ikangaa, Tanzania

"Good things come slow - especially in distance running.'- - Bill Dellinger, Oregon coach*

"All top international athletes wake up in the morning feeling tired and go to bed feeling very tired. "- Brendan Foster

"Running is a big question mark that's there each and every day. It asks you, Are you going to be a wimp or are you going to be strong today?' " - Peter Maher, Irish-Canadian Olympian

"Somewhere in the world someone is training when you are not. When you race him, he will win. " (A Mensh favorite.) - Tom Fleming's Boston Marathon training sign on his wall

"I don't train. I just run my 3-15 miles a day. " - Jack Foster

"COMMON MISTAKES MADE IN CC TRAINING!!!" Don't make them!.....

1. Running LSD runs TOO FAST!.... this only adds to fatigue and does NO BETTER than running slower Also, DON'T race in "practice" unless instructed to do so by US, and, certainly not on LSD days! LSD days also help us "recover" from tougher days; thus, "pushing it" on easy days doesn't allow the needed recovery (removal of lactate from muscle tissue, e.g.) AND will INCREASE RISK OF INJURY, a 'no-no!"

2. Running lactate threshold workouts TOO FAST OR TOO SLOW ... IN order to train "your" threshold, you must train 'AT YOUR" threshold! Running at a faster OR slower pace will NOT accomplish what we are trying to create in our Lancer harriers! ... Again, let's not risk INJURY!

3. Doing aerobic interval workouts FASTER THAN THEY SHOULD BE... The goal of "training" is to provide the least stressful stimulus to illicit the absolute BEST desired "adaptation"(i.e. to stress!, or, running hard!), so if a particular pace accomplishes what you(or we) want/desire, then running faster will ONLY serve to add unnecessary/additional fatigue to your legs and GREATLY INCREASE THE RISK OF INJURY, a "no-no!"

4. Doing ANY kind of "speedwork" without enough EASY mileage(a.k.a. "BASE") mileage behind you! ... Doing this is absolutely worthless to DISTANCE RUNNERS!!!!!!..... Might I add, STUPID?!.... It's like trying to put a roof on a house WITHOUT building the foundation, or, taking a "Final Exam" in Biology without having taken the class! You're simply not prepared! This mistake will almost ALWAYS result in injury, since increasing the INTENSITY of your running is a much greater injury-risk than increasing the VOLUME!

5. Doing TOO MUCH TOO SOON!..... this is the most common way distance runners get hurt! Our bodies need EASY days as much as, if not MORE THAN, hard days! Training is a "stress!". . .You MUST allow your body to adapt to that stress in order to become a better **CHARGER Cross-Country Runner!**

PLEASE,

Think about YOUR contribution to the TEAM each and every time you lace up your training shoes for a run..... mess up, and you hurt us ALL!..... Cross-Country is the ULTIMATE team sport every member must improve both mentally and physically, reaching each and every practice higher and higher in order to improve. The above training offerings will serve to make you not only the best CHARGER Cross-Country Runner, but, perhaps more importantly, the best HUMAN BEING possible!

Thank you for being part of the magic that IS Cross-Country!

REMEMBER. finally. . . .

"Teamwork and training are the fuels that allow common people to produce uncommon results!"

Dr. Matt Gilchrist
Head Coach
Chantilly High School Cross-Country "2016"