

Cooking to Perfection– Follow the Recipes



Athletic.net SuperClinic 2020

Scott Christensen

- Stillwater, Minnesota, head coach for 37 years.
- 1997 National High School Champions (*The Harrier*).
- Four Stillwater alumni have broken 4:00 in the mile since 2003.
- Fourteen year USATF Level 2 Lead Instructor in Endurance. Past 5 years with USTFCCCA.
- USA World Cross Country Team Leader 2003 and 2008.



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“I am happy. My coaches had presented me with many great practices. My body felt so light.”

Kenenisa Bekele 12:37.35



Outline of Cooking to Perfection Presentation

- Athletic & cognitive skills recipes.
- Teaching & coaching skills.
- Goals of a daily practice.
- Techniques used in daily practices.
- Differences in workouts throughout the season.
- Take-home points.

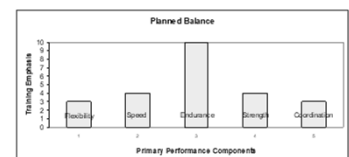
Athletic Skills

The Primary Physical Performance Components

- Strength
- Speed
- Flexibility
- Coordination
- Endurance

Building Athleticism

- Multilateral Training
- Balance
- Planned Balance
- Specialization



Where Many Coaches Work



Coaching Distance Runners Then & Now

Then

Training Volume
Max Strength
Template Postures
Quantity of Ground Forces
Strength Emphasis
Block Periodization

Now

Training Quality
Functional Strength
Individual Postures
Quality of Ground Forces
Coordination Emphasis
Prescriptive Periodization

What Cognitive Skills Should be Developed at Practice?

- Attention (to relevant cues)
- Anticipation (based on correct reading of cues)
- Concentration (sustained focus over time)
- Memory retrieval (solving problems from past experiences)
- Automaticity (attention to only a few details, the rest are under automatic control)
- Creativity (develop new insights that are novel and effective)

Teaching for Developing Athlete Decision-Making Skills

- Wholistic training
- Competition-like drills
- Decision-making emphasis
- Deliberate practice
- High variability
- Reduced, delayed, summary feedback
- High levels of questioning
- Extensive use of video and other feedback
- High levels of athlete cognitive engagement & effort

Daily Goals of Distance Practice

- Develop the aerobic and anaerobic components necessary for the event.
- Develop/increase durability.
- Increase speed of movement.
- Improve functional strength.
- Work toward a goal.
- Build mental toughness.
- Improve self-esteem.
- Ability to collaborate.

Practice Template

1. Announcements and workout emphasis
2. Warm-up, mostly dynamic
3. Technical or Max Speed
4. Speed Endurance
5. Endurance
6. Strength
7. Coordination
8. Flexibility
9. Cool-down
10. Debrief

The Warm Up Unit

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Low Intensity Warm-up

- Designed for those low force production aerobic sessions.
- Allow 10 minutes.
- Walking step lunges.
- Small amount of low impact running.
- Agility running in multiple directions.
- Range of motion arms with running.

High Intensity Warm-up

- Designed for those high force production aerobic, hill, and most anaerobic sessions.
- Allow 15-20 minutes.
- Everything from the low impact warm up.
- Add a vertical component: skipping, bounding, mini hurdle hops, skip-skip-lunge, backward thrusts, etc.
- Add short sprinting runs.

Race Day Warm-up

- Designed for races, time trials, max velocity, and speed endurance sessions.
- Allow up to 30 minutes.
- Everything from the high intensity warmup.
- Before the sprints add 1 minute each of 5k pace, 1 mile pace, and then 800 pace. Get progressively faster.

The Technical Unit

Max Speed Work

- 2-3 mi Race Day warm-up
- 6-8 x 30 meters on the fly on the track
- 3 min rest between each repeat
- 4 mile continuous run
- Cool down



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30 Meter Flys



The Endurance or Speed Endurance Unit

Choosing the Proper Training Tool

- Aerobic workouts are mainly done with bouts of continuous runs.
- Anaerobic workouts are mainly done with bouts of interval or repetition runs
- Interval & repetition runs are work bouts punctuated with periods of incomplete rest following the rule of 2/3.

Intervals vs. Repetitions

- Intervals have short and incomplete rest.
- Repetition Runs are longer with more complete rest.
- Intervals = efficiency work
- Repetition Running= capacity work
- Work may be anaerobic or aerobic.
- Intensity is determined by rest period.
- Total workout volume can exceed race distance, but not individual bouts of work.

What are You Trying to Cook?

100 meters	Acceleration & max speed	
200 meters	Anaerobic capacity	
400 meters	Anaerobic efficiency	
800 meters	Anaerobic efficiency Aerobic power	
1600 meters	Aerobic power	
5000 meters	Aerobic power	
10000 meters	Aerobic efficiency	

Great Tool -- Poor Application





Anaerobic Work Done in Intervals or Repetitions

- Max Speed = 30-60 meters
- Speed Endurance = 60-150 meters
- Special Endurance 1 = 150-300 meters
- Special Endurance 2 = 300-600-meters

Training intensity determined by recovery interval.

Use Reference Marks

Aerobic Training Reference

- Heart rate
- Lactate measurement
- Percentage of $vVO_{2\ max}$
- Perceived Effort
- Descriptive

Anaerobic Training Reference

- Percentage of max speed
- Percentage of 400 speed
- Lactate Measurement
- Perceived effort
- Descriptive

LT Aerobic Work Example

5 mile continuous tempo run

Heart Rate	80% of Max HR (212 bpm) = 171 bpm
Lactate	Lactate threshold = 3.2 mmol/L
$vVO_{2\ max}$	85% of 100% $vVO_{2\ max}$ = 4:53/mile
PE	14 out of a scale of 20
Descriptive	Medium pace or "just fast enough to discourage conversation"

Special Endurance 2 Work Example

8 x 400 repeats with 3 min recovery

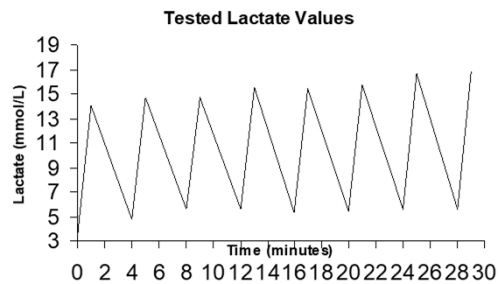
% of max speed (m/s)	92% of max speed m/s
% of 400 speed	95% of DP 400 speed
Lactate	14-15 mmol/L end, 5-6 mmol/L start
PE	18 out of a scale of 20
Descriptive	Fast pace. Very tough workout

Special Endurance 2 Example

8 x 400 at 58 seconds. 3 min recovery. Lactate in mmol/L

	Pre-Lactate	Post-Lactate	Time
400 #1	3.3	14.1	59.0
400 #2	4.8	14.7	57.9
400 #3	5.6	14.7	58.2
400 #4	5.6	15.6	58.4
400 #5	5.3	15.5	57.7
400 #6	5.4	15.7	57.4
400 #7	5.6	16.7	58.3
400 #8	5.6	16.9	57.6

Sp End 2 400 Meter Repeat Day



vVO_{2max} Work Example

VO_{2max} pace workouts have their greatest training effect over the last half of the session.

- 2 mile active warm-up to same course.
- Extent of work is 7 x 800 meters. Intensity is maximum aerobic power effort. 3200 test time from last micro/divided by 4 is goal time for each bout.
- Work time = Rest time
- 2 mile cool-down. Elevate and stretch and then conditioning sticks.

The Strength Work Unit



The Coordination Work Unit



The Flexibility Work Unit



Use Sticks Every Day



The Cool Down Unit

- After a hard run there are three stressors:
 - Body Temperature
 - Hydration Issues
 - Low Blood Glucose

Address these challenges in the listed order

Cool Down Protocol

1. After workout or race is done, immediately embark on an 8-10 minute slow jog.
2. Drink 16 oz of water from your own water bottle.
3. Do some light stretching.
4. Elevate legs for 8-10 minutes.
5. Drink 16 oz of sport drink within 20 minutes of stopping race or workout.
6. Eat a 700-1000 calorie meal within 2-4 hours.
7. Sleep 8-9 hours.

So, Let's Go to Distance Practice

- Do one of three 3 different warmup units: LI, HI, or RACE.
- Do any speed unit or technical unit.
- Choose & do the endurance unit:
 - extent, volume, and intensity
- Do a strength unit that is appropriate for the session.
- Do a cool-down unit that follows or includes both flexibility & coordination.

Sample 800 Session

- Explain workout scope & goals
- 25 minute HI warmup
- 6 x 120 meters, 6 minutes active interval recovery
- 20 minutes of continuous plyometric circuits
- 4 x 10 hurdles of hip mobility
- 3 mile cool-down run
- 15 minutes static stretching & foam rollers

Sample 1600 Session

- Explain workout scope & goals
- 20 minute LI warmup
- 4 x 1600 meters, $v\text{VO}_{2\text{max}}$ pace,
 - work time = active recovery interval
- 20 minutes of easy running
- 3 sets Gambetta circuits (10 each deep BW squats, R & L step lunges, BW squats then a jump)
- 15 minutes static stretching & foam rollers

Sample 3200 Session

- Explain workout scope & goals
- 20 minute LI warmup
- 7000 meter tempo run at LT pace
- 40 minutes of easy running
- 5 x 80 meter strides on football field
- 20 minutes body core work
- 15 minutes static stretching & foam rollers

Take-Home Points

- Cook up sessions that are multi-lateral.
- Add the proper balance and sequence of ingredients to training units.
- Make practice a learning experience recipe.
- Choose the proper practice tool to stimulate the desired training effect.
- Use continuous running, interval running, and repetition running practice design based on desired adaptation.

