

THE MARATHON
GULF WINDS TRACK CLUB

## SPEAKERS



- Ann Centner
- Marathon PR: 2:38
- PhD in Nutrition at FSU
- Current Research Assistant at FSU
- Born in Athens, GA

- Stan Linton
- Marathon PR: 2:18
- Wakulla HS \& FSU Cross Country
- Navy HR Officer
- Born in Tampa, FL


## MARATHON TALK AGENDA

- Physiological Terms
- Training Concepts
- Periodization Schedule
- Strategies, Tactics, and Fueling


## INGREDIENTS FOR MARATHON SUCCESS



## PHYSIOLOGICAL TERMS \& STATS

## AEROBIC VS ANAEROBIC



## AEROBIC FITNESS INDICATORS

- VO2 Max
- Running Economy
- Lactate Threshold


Frank Shorter, Olympic Gold Medalist in the Marathon at the 1972 Olympic Games in Munich, recorded a VO2 max of $71 \mathrm{ml} / \mathrm{kg} / \mathrm{min}$.

## PHYSIOLOGICAL CHARACTERISTICS

|  | $<\mathbf{2 : 3 0}$ (Average = 2:21) | $\mathbf{2 : 3 0} \mathbf{- 3 : 0 0}$ (Average 2:37) | > 3:00 (Average 3:24) |
| :---: | :---: | :---: | :---: |
| Type 1 Fiber \% | 76 | 64 | 56 |
| Years of Training | 7 | 4 | 2.5 |
| \# of Marathons | 5 | 4 | 1 |
| Average Weekly Miles | $90 \mathrm{mi} / \mathrm{week}$ | $70 \mathrm{mi} / \mathrm{week}$ | $35 \mathrm{mi} / \mathrm{week}$ |
| VO2 Max (ml/kg/min) | 71.8 | 65.6 | 58.7 |
| VO2 @ 6:20 pace | 45.4 | 48.6 | 51.4 |
| \% VO2 @ 6:20 pace | 64 | 74 | 88 |
| \% VO2 @ Marathon Pace | 80 | 80 | 71 |
| \% LT @ Marathon Pace | 93 | 92 | 85 |

Sjödin, Bertil \& Svedenhag, Jan. (1985). Applied Physiology of Marathon Running. Sports medicine.

TYPES OF RUNNING

## TRAINING PACES

## Slowest



## Hills/Rep

V. 02

Fastest
https://vdoto2.com/calculator/

## EASY RUNNING



Approximate stroke volume and heart rate at different levels of cardiac output in a marathon athlete.

- Benefits
- Type 2 -> Type 1 Fiber Conversion (i.e. improved muscular endurance/fatigue resistance)
- Muscular-structural development from "time on feet"
- Stroke Volume
- Capillary Density
" Mitochondrial Development
- Intensity
- Conversational
- 60-70\%
- Duration
- Purpose of the Run
- $80 \%$ of total weekly volume


## MARATHON PACE

- Benefits
- Benefits of Easy Running
- Practice at Race Pace
- Pre-race and Intra-nutrition
- Intensity
- Marathon Race Pace (or slightly faster)
- Duration/Length
- Intermittent Bouts
- WU, $3 \times 4$ mile/1 mile EZ, CD
- Steady Running
- WU, 12 miles, CD


1983 World Marathon Champion Rob de Castella of Australia battles the 1984 Olympic Marathon Champion Carlos Lopes of Portugal. Both men set world records in the event and have personal bests faster than 2 hours, 8 minutes.

## THRESHOLD TRAINING



Exercise Intensity

- Benefits
- Improved Endurance
- Reduced Blood Lactate Accumulation
- Increased Speed at LT
- Intensity
- Comfortably Hard, 1 hour race pace
- 82-88\%
- Duration/Lengths
- Cruise Intervals (3-5 min)
- Longer Broken Segments (5-15 min)
- Continuous (20-30 min)


## CRITICAL VELOCITY (CV)

- Benefits
- Improved Aerobic Capacity of Fast Twitch Fibers
- Can lead to improvements to VO2 max and lactate threshold
- Intensity
" Hard, 30-35 min race pace
- $90 \%$ effort
- Duration/Lengths
- Short Intervals (1-3 min) with float recovery
- Long Intervals (4-7 min) with jog/walk recovery
- Total volume can be twice as much as VO2 max sessions (next slide)


## VO2 MAX WORKOUTS

- Benefits
- Improved Aerobic Power
- Improved Economy at VO2 Max
- Intensity
- Uncomfortably Hard, 11 min race pace
- 95-100\%
- Duration/Lengths
- Short Intervals (1-2 min)
- Long Intervals (3-6 min)



## REPETITIONS \& HILL SESSIONS

## - Benefits

- Enhanced Elasticity of Muscles, Tendons, and Ligaments
- Improved Leg-Muscle Power and Resistance to Muscle Fatigue
- Improved Running Economy
- Intensity
- Hills $=5 \mathrm{~K}$ to 10 K Race Pace
- Reps = Mile Race Pace
- Duration/Lengths
- Short Intervals (30s to 2 min )
- Long Recovery (1:2, 1:3, etc)


1972 Olympic 1500m Champion Pekka Vasala (right) running a hill session, following the New Zealand tradition of natural strength training founded by Arthur Lydiard).

## STRENGTH TRAINING



Olympic Champion and Marathon World Record Holder, Eliud Kipchoge, during a strength training session.

- Benefits
- Enhanced Elasticity of Muscles, Tendons, and Ligaments
- Improved Leg-Muscle Power and Resistance to Muscle Fatigue
- Duration/Frequency
- 1 hour per session
- Recommend 2-3 sessions per week
- Focus
- Mobility, Strength, Function


## RACES AND TIME TRIALS

- Fitness Indicators
- Aspect of Training
- May or May Not Require Taper


Legendary runner and coach, Gary Droze, has set several course records for races in Tallahassee. Some of his course records are still standing after 25 years.

## SCHEDULING \& PERIODIZATION



## PHASES OF TRAINING (LYDIARD)



## WEEKLY MARATHON TRAINING: EX 1

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| LONG | REC <br> or <br> OFF | Q1 | MLR | EZD* | EZD | Q2 |
|  |  |  |  |  |  |  |

[^0]- 2-3 Long Runs (LR \& MLR)
- 1 Regular Long
- 1-2 Medium Long
- 2-3 Harder Sessions (Q1 \& Q2)
- LT Workouts
- VO2 Max Workouts
- Repetition/Hill Session
- Time Trial or Race
- Easy Runs \& Recovery Runs
- DWYC


## WEEKLY MARATHON TRAINING: EX 2



- Q=quality Sessions (2-3*/Week)
- Long (16-20 mi) with MP Miles
- LT Workout (Week 1 Q2)
- CV Workout (Week 2 Q2)
- VO2 Max Workouts (Week 3 Q2)
- Medium Long (MLR)
- Repetition/Hill Session (Q3)
- Time Trial or Race
- Easy/Recovery Runs
- Do not overdo these
- MP + $1 \mathrm{~min} / \mathrm{mile}$ or slower
- Most people need an off day
- Other aerobic activity (walk, swim, bike) okay


## STRATEGIES, TACTICS, AND FUELING

## STRATEGIES \& TACTICS

- Pacing Strategies
- Negative or Even Split
- Checkpoints
- Stick to your paces
- Tactics
- Drafting \& Pack Running
- Evaluating the Course
- Running the Tangents
- Mentally Train



## FUELING STRATEGIES



- Carb Loading
- 2-3 day carbo-load
- Keep calories constant but reduce fat intake
- Hydration
- Sports drink day before to top off glycogen/carb stores and sodium/salt stores
- When to take Gels
- Early
- Every 30 minutes/3-4 miles
- 6 gels; take with water


## KEY TAKEAWAYS

- Improve the physiological aspects you can control (Ingredients of success)
- Train your mind to command your body what to do
- Structure your weeks \& months systematically to optimize your performance
- Run within your current ability (pace calc vdoto2.com/calculator/)
- Rehearse your game plan in training and stick to it race day.
- Believe in your ability

Muscular Endurance

Race Day
Aerobic Conditions

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[^0]:    * Can substitute for a lighter/shorter session

