



# **A More Durable and Healthy Athlete**

**By Jeremy Fischer USATF/ IAAF**

# Training Design for the Sprints, and Jumps

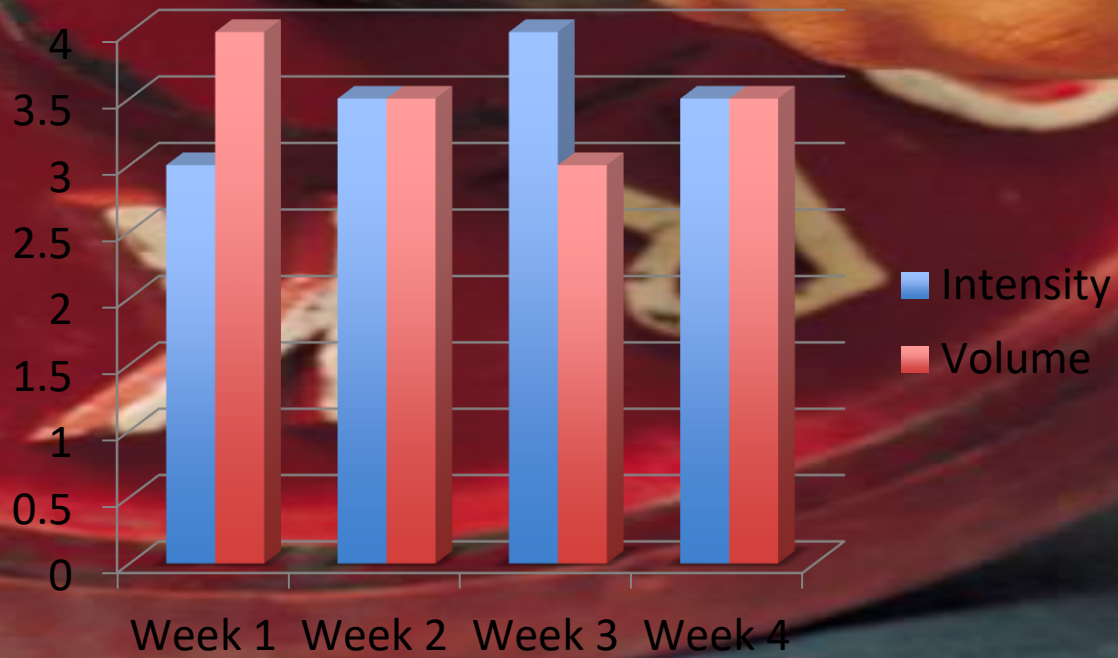




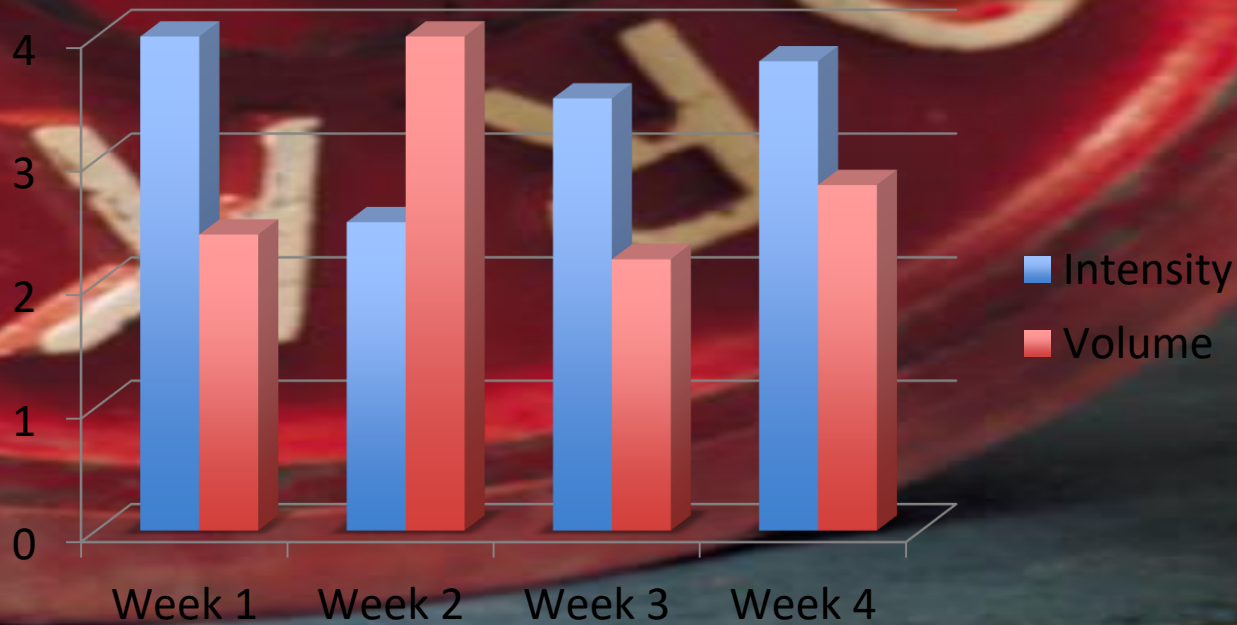
## **Periodization**

- Linear (Boompa) versus Non-Linear (Bondarchuk)**
  - Block Periodization versus Random Session Training**
  - Complex Training (Old Russian System)**
- Postactivation Potentiation**

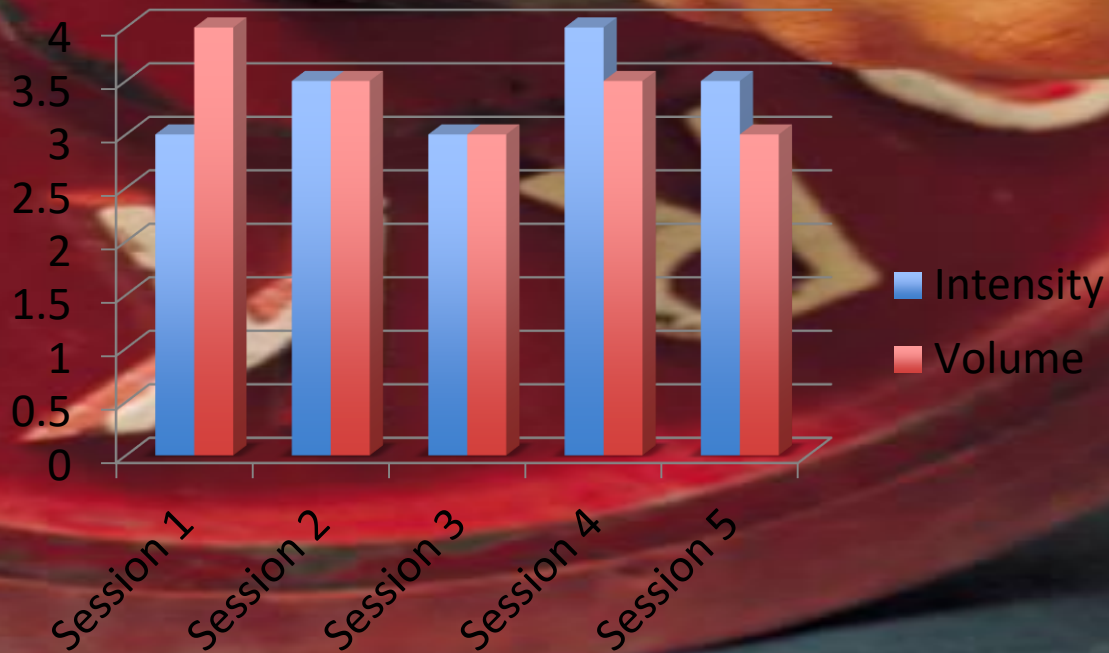
Block Training



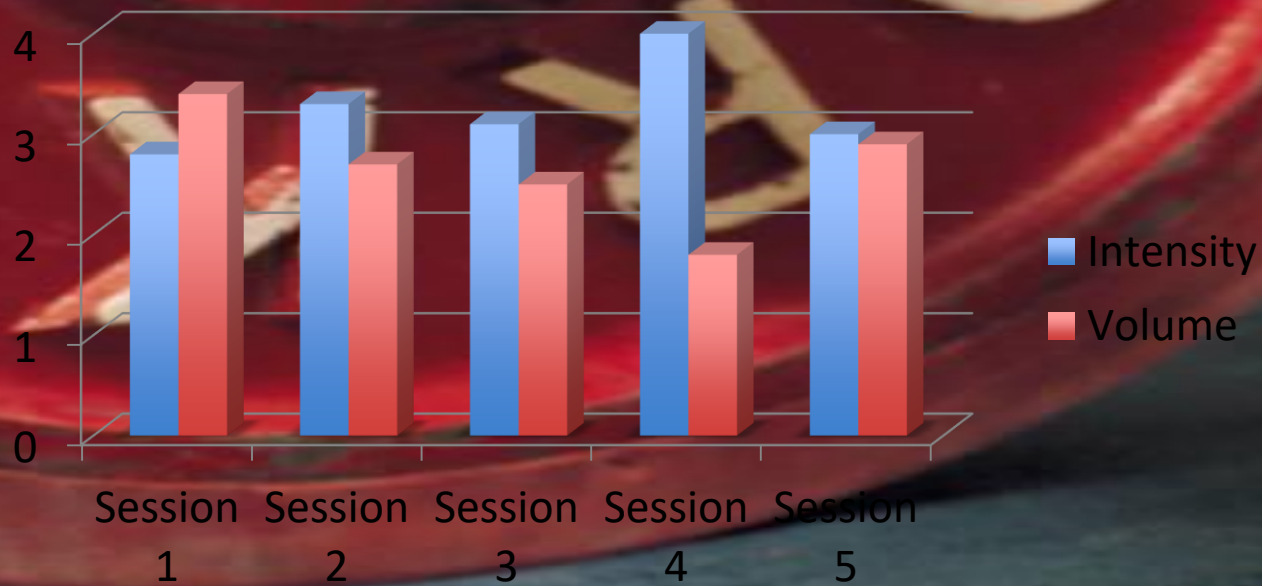
Non-Linear



Block Training




Non -Block Training Session





NAME/GROUP		COMPETITION	SPEED	ENDURANCE	STRENGTH	PSYCHOLOGICAL	TESTING	OTHER
Calendar	Phase Month Monday microcycle #							
	Meet Location							
Rethematics	Peaking Index 1-5							
	Speed							
	Strength							
	Endurance							
	Mobility							
	Technical							
	Taper/Restore							
Volume	Testing							
	High							
	Medium							
Intensity	Low							
	Hard							
	Medium							
	Easy							
Comments	Rest							





**Five Biomotor Abilities**  
**Basics of All Training**

- Coordination
- Flexibility
- Strength
- Speed
- Endurance

## Coordination

US Epidemic- Society is more docile- less active  
Single Sport Year Round

- **Balance**
- **Bilateral Symmetry**
- **Technical Models**





## Flexibility/ Range of Motion

Static Flexibility

Dynamic Flexibility

Muscle Suppleness

Range of Motion of joint/ socket pairing

Effect of Stretch on Muscle Action –Force vs Length



## Endurance

Cardio/Aerobic

Anaerobic/ Lactate Threshold Work

Speed Endurance

Strength Endurance

Power Endurance



## Strength

Maximum Strength

Specific Strength

Power Strength

Power Speed

Reactive Strength



Speed

Overlap of the 5 Biomotor Abilities

Acceleration

Transition to Maximum Speed

Maximum/ Absolute Speed

Controllable Top Speed/ Maintain Elastic Ability





Intensity vs Volume

**Density of Work**

How much work is done in a session, week, month, year

**General versus Specific Work**

Building the “machine” so it can do the work

**Rest**

True real work





## Macrocycles

Multiple Mesocycles

Themes of Training General Preparation,  
Pre Competition,  
Competition, Off Season



## Mesocycle

General Prep Training, Specific Prep, Pre-Comp  
Competition, Peaking, Out of Competition  
Training Within the Macrocycle

Usual lengths of 3-5 weeks or blocks  
Length determined as not to fatigue  
or plateau athlete



Microcycle # <u>  20  </u>	Dates _____	Event group <u>  High Jump  </u>																																								
Theme for week: <u>  Comp Phase  </u>		Comments: _____																																								
<b>Sunday</b> Active Rest	<b>Monday</b> Warm-Up Acceleration Drills High Jump Approach Runs Acceleration Sprint Work- Block Starts Body Balance Drills Med Ball Work Weight Room- Olympic Lifts Cool Down Prehabilitation Work	<b>Tuesday</b> Warm-Up Speed Development Drills HJ Short Approach Jumps Snake Runs, Curve Runs Hurdle Mobility Work Functional Movement and Body Awareness Drills Weight Room- Static Lifts Cool Down																																								
<b>Wednesday</b> Abbreviated Warm-Up Balance Drills/Yoga Circuit Training Core Strength Work/Physioball Work Pool or Bike Work- Low Intensity-Med Volume	<b>Thursday</b> Warm-Up Speed Development Drills HJ Technique/multi Jumps Max Velocity Work- Circle Runs, Figure 8s Med Ball Work Weight Room- Mixed Static/Olympic Day Cool Down Prehabilitation Work	<b>Friday</b> Abbreviated Warm-Up Approach Runs Low Bar Jumps Accelerations																																								
<b>Saturday</b> Meet Day	<p style="text-align: center;"><i>Intensity of load by day</i></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Su</th> <th>M</th> <th>T</th> <th>W</th> <th>R</th> <th>F</th> <th>Su</th> </tr> </thead> <tbody> <tr> <td>Hard</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Med</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Easy</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Rest</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Su	M	T	W	R	F	Su	Hard								Med								Easy								Rest								<b>Post - Workout Comments</b>
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Event Specific Strength Training  
General Strength  
Specific Strength  
Strength and its Role in Athletics



## General Strength

Major Muscle Groups

Hormonal and Muscular Changes

Static Lifts

Early Olympic Lift Development

Concentric, Isometric and Eccentric Work



Specific Strength

Box Jumps, Box Step Downs, Weighted Bounds,  
Overweight

Technical Specific Strength Training



Strength Training Role in Athletics

Supplement Training done on track

General Design flaws using classical lifting design

Maximum Strength vs Power



Peripheral Issues for the Events

Coordination- sedentary lifestyle issues

Loss of athletes to OTHER sports

Specificity- Year round athlete

Gymnastics, Yoga



# PLANNING and LOADING

Bio-motor Ability	Intensity	Duration	Rest (ratio)	Distance	Total Distance
SPEED	> 95%	< 5s	1:30 to 1:50	20 – 40m	
SPEED-ENDURANCE	≥ 95%	6 – 20s	1:10 to 1:20	50 – 180m	
Speed Endurance I	≥ 95%	20 – 40s	1:10 to 1:20	200 – 300m	
Speed Endurance II	≥ 95%	40 – 90s	1:10 to 1:20	350 – 600m	
INT INTERVAL	80 – 90%	10 -70s	1:4 to 1:8	75 – 500m	
EXTENSIVE REP/INTRVL	≤ 75%	10 – 120s	1:1 to 1:4	50 – 600m <sup>25</sup>	



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