Power Training for Jumpers
University of South Dakota Track & Field

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Why I am here

• Product of Coaching Education Program
• Tribute to all of the coaches that have answered every question I have ever asked
References

You are only as smart as the people you steal ideas from:

• Boo
• Dan Pfaff
• Gary Winkler
• Vince Anderson
• Dennis Shaver
• Beth Alford-Sullivan
• Kathleen Raske
• My coaching staff
• And so many more…
Training Philosophy

• Focus on Bio-motor abilities
• Personal training philosophy
• Develop personal menus
• Individualize training based on each person/training group
5 BIOMOTOR ABILITIES

• Strength
• Speed
• Skill
• Endurance
• Flexibility

* All 5 bio-motor abilities must be addressed at all times.
Combinations of Biomotor

Power = Strength + Speed
Agility = Skill + Speed
Mobility = Flexibility + Skill
Teaching Philosophy

- Developmental
- Mach Drills
- Ankling/calfing/knee
- Part-part-whole
- Short Approach
Blood Chemistry

- Order of lifts during OWT
- Body Building
- Mild Lactate during recovery
- Choc. Milk
- Blood Sugar level/GI
- Sleep Cycles
Strength Training

- Core/Pillar & Balance (posture and skill)
- Body Building
- Med Balls & MT
- OWT
Balance Stability/ Core/ Physioball – If not incorporating core in your training programs start now! Contributes to athletes ability to hold positions and correct posture. Good core strength clears pathway for force application. Corrects imbalances and some biomechanical weaknesses.
Strength Training

- OWT
  - Cleans & snatches
  - Med to high resistance (50-100%)
  - Med to low reps (5-8 X 1-5)
  - Multiple joint exercises (coordination)
  - Endocrine Stimulation
  - “Hip Pop”
  - Rate Coding
  - Power before absolute strength
Static Lifts

• Core weightlifting exercise
  – Squats (all types), press, dead lifts, etc…
  – Major muscle groups, full RO, Low speed
  – Absolute & Posture Strength
  – Endocrine Stimulation
  – High resist/low reps(4-6 X 4-8 @ 30-90%)
  – Possible Hypertrophy issue (rare)
### Prilepin’s Table

<table>
<thead>
<tr>
<th>Percent</th>
<th>Reps per Sets</th>
<th>Range of total reps</th>
<th>Optimal Total Reps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 70%</td>
<td>3-6</td>
<td>18-30</td>
<td>24</td>
</tr>
<tr>
<td>70-79%</td>
<td>3-6</td>
<td>12-24</td>
<td>18</td>
</tr>
<tr>
<td>80-89%</td>
<td>2-4</td>
<td>10-20</td>
<td>15</td>
</tr>
<tr>
<td>90 +</td>
<td>1-2</td>
<td>4-10</td>
<td>7</td>
</tr>
</tbody>
</table>
OWT Session

- OWT
- Press
- Squat
- Twist
- Toe Raisers
- Bonus- MT
OWT Prescriptions

Olympic movements
Snatch
Powercleans
Hang clean
Powerpulls
snatch pulls
hang snatch
Clean & jerk
Split Squat Snatch
1 arm snatch
2 stage Powerclean
3 stage powerclean
Squats movements
deep squat
parrall squat
front squat
single leg squat
single leg Good AM
RDL
Lunge
Step-ups
box jumps
hex jumps
jump squats
lunge jumps
rotational step-ups
1/4 squats
dead lifts
straight leg dead lift
Press Movements
push press
split squat press
bench press incline
miliatry press
dumbell press
Twist movement
seated russian twists
standing twists
seated 45
standing 45
above the head
bench twsit by feet
seated diagnoail twist
back on med ball
crucher postion feet on/off ground
Toe Raisers
postive (flat to pointed toe)
negative (cocked to flat)
prescription:
2-3 X 10 each axis

Prescription:
3 sessions/week, 18-25 sets/week, start with 5 reps and decrease as season goes-
reduced weight during "championship" part of season
full recovery is good between sets, bar does not touch ground between reps
Body Building

• Circuit or stage w/limited recovery (1 min)
• 20-24 sets of 10-12 reps @ 60-75%
• Used at different parts of the year
• Increase endurance, helps with recovery & problems from OWT
• Glycogen & Endocrine stimulation
• Smaller Movements
• Possible Hypertrophy Issues (rare)
Olympic Weight training

- Pre-season (General Prep)

- Power Cycle ➔ Absolute Strength

- Pre-comp cycle
  - Ballistic lifts

- Comp Cycle
  - 3 Day rollover
Training Cycles

• Pre-season
  – OWT- 4-5 reps @ 50-70% (hormone levels and power of 3)
  – Statics  8-8-6-8 @ 40-60%
  – Parallel squats
  – Core
  – Develop technique
  – Body building/hormones (2-3Xweek)
Power Cycle ➔ Absolute Strength

- Power Cleans/Snatches, squats + squat variations
- SLRDL once a week
- #'s – OWT 3-2 or 1’s/statics/statics 4-6*
- % based on maxes & Prilepin’s Table
- *Rate of Force Development (RFD) we do AMAP every 10 days @ 100-105% of max
Ballistic Lifts

- Weighted Jumps and speed press
- Large muscle groups and big movements, high speed, small ROM, Eccentric movements (4-6 X 5-10 @ 10-30% of BW)
- Absolute Strength Enhancement
- Elastic Strength Development
- Some Endocrine Stimulation
- Limited use during maintenance phase
- Some risks (impact and spinal loading)
Ballistic Cycle (sample)

- Split Squat Snatch
  - 4 X 2 full @ 80%
  - 4 X 2 hang @ 85%
- Incline Press 4x3
- Single leg squats 6 X 4
- Russian Twists
- Seated rows
- Positive Toe Raises

- Snatch from Box 4 X 2 @ 75%, 4 X 1@85%
- Press 4x4
- Squats
  - Squat jumps 4x6 w/20-30% of body weight
  - Lunge jumps
- Seated russian twists
- Roman sit-ups
- Negative Toe Raises
3 day roll-over

- **Day 1**
  - 8 X 2 Snatch @ 80%
  - Jump Squats @ 20% of BW
  - Twist
  - Negative Toe Raises

- **Day 2**
  - 8 X 1 Hang cleans @ 80-90%
  - Push Press 4 x 3
  - Dynamic Double Step-ups 4 X 6 @ 15% BW
  - Twists
Things we do at The U.

- Olympics all the time
- Lifting- feet together → feet split
- Combine Plyo’s and Lifting
- Core strength
- Jamaican Jump Series (Lunges)
- Combine Lifting and Balance
- Hurdle Flexibility
- Multi-throws for power
- Recovery week
- Testing
Let's talk med ball

**Multi throws**
- Used to develop power
  - We try to improve OHB, BLF & OHF
  - Load, fire, extend

**Med Ball circuits**
- General strength
Jumps

**Plyometrics (ec/con contraction)**
- In-place Jumps
- Multi-jumps/Hurdle hops
- Bounding
- Depth Jumps

**Power**
- Box-ups
- Combos with lift
- Circuit in sand/HJ pit
Flexibility/Mobility

Pre-workout
• Skips/jog, static, dynamic, sprint drills
• Foam roller, Skips, static, activation exercises
  – Lunge & Squat matrix
  – Squat walks/quadruped series (w/bands)/Hip Extensions
• Balance & Transplane movements

Post-workout
• Skips
• Static
• Foam roller
• Ice bath
• Hurdle stretch/mobility
• Ab’s/core
• DMR
Run training

• Sprint Drills
• Accel/Speed/Speed End. (95%+ w/good recovery)
• Form running
  – Running is a skill
  – runways
  – wickett drill
• Strength- Hills, long sprints
Sprint Drills

• Use drills to teach posture, cues
• Use drills to strengthen/stimulate
• Develop progression to transition from drill to actual running
• Know difference between Accel drills & max velocity drills (Shift drill & Wickett Drill)
Wickett Drill

• Focus on heel to butt, step over the knee
• Series of 16 cones (sets of 4) to run over with 10 yard run in. (can be extended)
  – Women/early Season (4-6, 4-9, 5-0, 5-3)
  – Men/early season (5-0, 5-3, 5-6, 5-9)
  – Keep progression growing each couple of weeks, by 3 inches increments
  – Mid season (5-6, 5-9, 6-0, 6-3)
  – Men/Champion ship season (5-9, 6-0, 6-3, 6-6)
Speed training

“If you ain’t running fast, you ain’t running speed!”

• Acceleration
• Absolute Speed
• Speed Endurance
# Speed prescriptions

<table>
<thead>
<tr>
<th>Terminology</th>
<th>Length of run</th>
<th>% of predicted performance</th>
<th>Rest interval Rep/sets</th>
<th>Session Volume Jumper/100/100H/200</th>
<th>Session Volume 400/400IH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceleration</td>
<td>0-30m</td>
<td>95% +</td>
<td>1-3/5-8</td>
<td>300</td>
<td>400</td>
</tr>
<tr>
<td>Absolute Speed</td>
<td>20-80m</td>
<td>90-95%</td>
<td>3-5/6-8</td>
<td>300/500</td>
<td>300/900</td>
</tr>
<tr>
<td>Speed Endurance I</td>
<td>50-80m</td>
<td>90-95%</td>
<td>1-2/5-7</td>
<td>300-800</td>
<td>600-1200</td>
</tr>
<tr>
<td>Speed Endurance II</td>
<td>0-150m</td>
<td>90-95%</td>
<td>5-6</td>
<td>300-900</td>
<td>400-1000</td>
</tr>
<tr>
<td>Special Endurance I</td>
<td>150-300</td>
<td>90-95%</td>
<td>10-12</td>
<td>600-900</td>
<td>600-1200</td>
</tr>
<tr>
<td>Special Endurance II</td>
<td>300-600</td>
<td>90-95%</td>
<td>15-20/full</td>
<td>300-600</td>
<td>900-1200</td>
</tr>
<tr>
<td>Tempo</td>
<td>50-long run</td>
<td>30s-+</td>
<td></td>
<td></td>
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</tbody>
</table>
Let's talk training...workouts!

Accel workout

- Short Hills (10m-40m)/stair sprints
- Sled Pulls or pushes
- Weight Training - Develop max strength in the prime movers.
- Standing Long Jumps (single & double leg)
- Sprints (10-30m)
- Different start positions (ground, switch feet)
- Blocks (yes for jumpers)
- Box Jumps
- Speed Squats
- Resisted → Assisted → Real Deal format
- Timed runs
Format of accel workout

• Warm-up (jog/skip, static, dynamic, Sprint Drills)
• Acceleration Work
• Multi-jumps
• OWT/static lifts
• Special Strength (barefoot walks, core or MT)
• Cool Down (jog/skip, static)
Testing

- Pre-season Decathlon
- Pent (Monday of Thanksgiving)
- During Recovery weeks
- Monday Accel workouts
- In Weightroom using multiple rep max
Evaluation

• Functional Movement Screening
  – Asses indv and training
  – Each Fall
  – Old injuries

• DMR (Daily Maintenance routine)
Straight leg raise (2 att)

- Ankle bone clears vertical line
  - Left: Yes, No
  - Right: Yes, No

- Bottom leg doesn't move (flat on floor)
  - Left: Yes, No
  - Right: Yes, No

- Both feet stay dorsi flexed throughout the motion
  - Left: Yes, No
  - Right: Yes, No

- Bottom leg stayed straight with no flex or backward
  - Left: No, Yes
  - Right: No, Yes

Assess stride flexibility while maintaining a stable pelvis.

Note:
- Pain
  - Left: Yes, No
  - Right: Yes, No
Writing Training

• Have a plan that follows your philosophy
• Individualize for each person
• Cloud Training Systems to organize your training sessions