DEVELOPING AND TRAINING FOR ATHLETIC STRENGTH
WHY TRY TO DEVELOP AND TRAIN FOR STRENGTH?

- SPORT SEASON IS 365 DAYS LONG.
- INJURY PREVENTION.
- KEEP UP WITH COMPETITORS.
- DEVELOP PHYSICAL AND MENTAL CONFIDENCE THRU PREPARATION.
- DEVELOP TEAM COHESION.
- YOU MUST CONTINUALLY IMPROVE AREAS OUTSIDE OF YOUR SPECIFIC SPORT TO REACH NEW LEVELS OF PERFORMANCE.
- WINNING IS FUN!
WHAT IS STRENGTH?

**STRENGTH**

ABILITY OF THE NEUROMUSCULAR SYSTEM TO PRODUCE FORCE. *(SIFF 00; STONE 03)*

THE MAXIMAL FORCE DEVELOPED BY THE CONTRACTING MUSCLE OR MUSCLES.
*(BAUER 90)*
WHAT IS ATHLETIC STRENGTH?

**ATHLETIC STRENGTH**

is the ability to apply optimal muscular force thru a full range of multiple joint movement with speed for a distance or set time required to execute a specific athletic movement.

(O’SHEA 1995)
ID PHYSICAL & MECHANICAL DEMANDS OF SPORTS

- **SKILLS REQUIRED FOR SUCCESS:**
  - RUNNING, BLOCKING, TACKLING
  - THROWING, SWIMMING, JUMPING, KICKING, GRAPPLING, STRIKING, SWINGING

- **SKILLS ARE GROUNDED IN:**
  - STRENGTH, POWER, QUICKNESS, MOBILITY, ENDURANCE, FLEXIBILITY
AST PROGRAMS CAN...

- OFFER GREATEST TRAINING TRANSFER TO ATHLETES
- REPRODUCE FORCES FOUND IN THE SPORT
- INCREASE MAXIMUM STRENGTH, ACCELERATION AND SPEED
- GENERATE HIP / TORSO ROTATIONAL FORCES IN MULTI DIRECTIONS (POWER ZONE!)
AST PROGRAMS CAN...

- REDUCE INJURY POTENTIAL
- INCREASE LEAN MUSCLE MASS
- IMPROVE PHYSICAL CONFIDENCE
- ENHANCE PRACTICE & COMPETITIVE PERFORMANCE
- FORCE ATHLETES TO THINK IN TERMS OF STRENGTH, SPEED & TECHNIQUE
CHARACTERISTICS OF AST EXERCISES

- FREE WEIGHT
- MULTI-JOINT
- GROUND BASED / CLOSED CHAIN
- PUSHING, PULLING, SQUATTING
- COMBINE HIGH FORCE AND HIGH VELOCITY MOVEMENTS
## BASE STRENGTH EXERCISES

**SPEND MAJORITY OF TIME HERE**

- BACK SQUAT
- FRONT SQUAT
- LUNGES
- DEADLIFT
- STIFF LEG
- DEADLIFT / RDL
- BENCH PRESS
- INCLINE PRESS
- DB PRESSES
- RACK WORK
- MILITARY PRESSES
BACK SQUAT BENEFITS

- INCREASED BONE DENSITY + INCREASED TENDON / LIGAMENT STRENGTH = GREATER JOINT STABILITY
- DEVELOPMENT OF POWER ZONE
- GREATER NEUROMUSCULAR EFFICIENCY = TRANSFER TO SPORTS REQUIRING HIP THRUSTS

LONG TERM SQUATTING STIMULATES PHYSICAL GROWTH & DEVELOPMENT
DYNAMIC STRENGTH
POWER EXERCISES

SPEND MAJORITY OF TIME HERE

- POWER CLEAN AND PULLS
- SNATCH AND PULLS
- PUSH PRESS / JERKS
- PLYOMETRIC PUSHUPS
- MEDICINE BALL WORK
POWER CLEAN BENEFITS

- TRAINS EXPLOSIVE TORSO ROTATION FOUND IN MOST POWER SPORTS
- ATHLETIC LIFTS MORE CLOSELY DUPLICATE MECHANICAL & PHYSICAL DEMands OF SPORT SKILLS
SPECIFIC SPEED

EXPLOSIVE EXERCISES

- UNLOADED CLEANS & SNATCHES
- SPRINTING
- SLED WORK / SPRINTING
- PLYOMETRICS / JUMP TRAINING
- PLYOMETRIC PUSHUPS
- MEDICINE BALL THROWS / TOSSES
DAILY WEIGHT ROOM IMPLEMENTATION

- PRIORITIZE SPEED / COMPLEXITY
- DYNAMIC WARMUP
  - PRE-LIFT NUTRITION
  - WARM-UP / LOOSEN-UP / BUILD-UP
  - OLYMPIC MOVEMENTS FIRST
  - STRENGTH MOVEMENTS SECOND
  - AUXILIARY MOVES / SAID APPROVED
  - COOLDOWN / DEVELOPMENTAL STRETCH
  - RECOVERY PLAN / NUTRITION
AST DESIGN PRINCIPALS

- SAID / SPECIFICITY PRINCIPAL
- PROGRESSIVE OVERLOAD
- PERIODIZATION
- VARIABILITY
- TESTING AND EVALUATION
- ID SPORT DOMINANT
- KNOW YOUR FACILITY AND ABILITY
FOUNDATIONS OF AST PROGRAM DESIGN

- Athletic Periodization
- Variability
- Said / Specificity
- Progressive Overload
- Testing
AST DESIGN PRINCIPALS
Specific Adaptations to Imposed Demands (SAID) / Specificity

- #1 GUIDING PRINCIPAL
  DICTATES CHOICE OF;
- ATHLETIC LIFTS AND AUXILIARY LIFTS
- INTENSITY OF TRAINING
- VOLUME OF TRAINING (SETS & REPS)
- REST PERIODS (DAILY & WEEKLY)
- SPEED / AGILITY / CONDITIONING FORMAT

YOU ARE WHAT YOU DO
AST DESIGN PRINCIPALS

Specific Adaptations to Imposed Demands (SAID) / Specificity

BOMPA’S ORDER OF RECRUITMENT AND ATHLETIC DEVELOPMENT

- Flexibility is Day to Day
- Strength is Week to Week
- Speed is Month to Month
- Work Capacity is Year to Year
ATHLETIC PERIODIZATION

- GOAL IS TO DEVELOP / MAXIMIZE STRENGTH-SPEED-POWER AND TO OPTIMIZE ATHLETIC PERFORMANCE (O’SHEA 1995)
- ORGANIZES TRAINING INTO PHASES
- A PLAN BASED ON YOUR CALENDAR AND YOUR NEEDS.
PROGRESSIVE OVERLOAD

- INCREMENTAL & CONTINUAL TRAINING DEMANDS
  - TOO LITTLE – NO PROGRESS & ADAPTATION
  - TOO MUCH – OVERTRAINING OCCURS

- INTENSITY / VOLUME / FREQUENCY
  - PRESCRIPTION VARIATION

- BUILD YOUR OBJECTIVES

- KNOW YOUR CALENDAR & ATHLETES
VARIABILITY

- DIVERSITY OF TRAINING
  - SET / REP VARIATION (NO PERFECT SCHEME)
  - EXERCISE VARIATION (SPLIT CLEAN & SNATCH)

- SIMULTANEOUS TRAINING OF MULTIPLE PHYSICAL VARIABLES
  - ATHLETIC CROSS TRAINING!

- PREVENTS BOREDOM & TENDENCY TO OVERTRAIN

- STAY WITH YOUR ORIGINAL MISSION
TESTING & EVALUATION

- TEST AT END OF TRAINING CYCLES
- STRENGTH
  - LIFTING 1 – 3 RM’S
- SPEED & SKILL
  - SPRINTS / T TEST / 5-10-5
- POWER
  - VERTICAL / BROAD JUMP
- FLEXIBILITY / MOVEMENT SCREEN
- AEROBIC & ANAEROBIC POWER
  - MILE RUN / 300 SHUTTLE
### PRESSING / SQUATTING ACTIONS

<table>
<thead>
<tr>
<th>WEEK</th>
<th>SETS / REPS</th>
<th>% OF 1 RM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 3 (4)</td>
<td>3 – 4 / 10-12</td>
<td>55-70%</td>
</tr>
<tr>
<td>5 - 8 (9)</td>
<td>4 – 6 / 5 - 8</td>
<td>75-85%</td>
</tr>
</tbody>
</table>

LARGE % OF STRENGTH TRAINING TIME SPENT HERE

| 10 - 11 (13) | 4 - 6 / 1 - 4 | 90-97% |
| 13 - 14 | ESTABLISH 1 RM? |
### OLYMPIC PERIODIZATION

#### CLEANING / JERKING ACTIONS

<table>
<thead>
<tr>
<th>WEEKS</th>
<th>SETS / REPS</th>
<th>% OF 1 RM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3 (4)</td>
<td>3 - 4 / 4 - 5</td>
<td>60-75%</td>
</tr>
<tr>
<td>5 – 8 (9)</td>
<td>3 – 5 / 3 - 5</td>
<td>75-85%</td>
</tr>
</tbody>
</table>

LARGE % OF STRENGTH TRAINING TIME SPENT HERE

| 10 – 12 (13) | 4 – 6 / 1 – 3 | 85-97% |
| 13 - 14 | ESTABLISH 1 RM ? |

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*Note: The table above outlines the weeks, sets, reps, and percentage of 1RM for cleaning/jerking actions in Olympic periodization.*