Movement orientated training for tactical personnel

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Movement Orientated Training for Tactical Personnel

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• Movement Orientated Training is a conceptual framework around which many current fitness trends are loosely (and on occasion incorrectly) based.

• MOT can be used to direct the occupational training and re-training of cyber and kinetic warriors.
Theory Review from TSAC 13

Movement Patterns

- Sagittal Plane
  - Flexion
  - Extension
- Coronal Plane
  - Lateral Flexion
  - Abduction
  - Adduction
- Transverse Plane
  - Rotation
  - Horizontal Flexion
  - Horizontal Extension

Unilateral

Bilateral
Theory Review from TSAC 13

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Theory Review from TSAC 13

MOT Design Influencing factors: Balance Profile

Balance Profile

- Static
  - Balance
- Dynamic
  - Counter balance
MOT Design Influencing factors: Synergy profile

- Isolated  Compound  Kinetic Link
+ Complex  Multi - plane
Theory Review from TSAC 13

MOT Design Influencing factors: Potential for Movement

- Flat Road March

+ Multi gradient, uneven terrain march
Theory Review from TSAC 13
MOT Design Influencing factors: Conditioning Profile

**Neuromuscular Conditioning**
- Strength
- Endurance
- Hypertrophy
- Power
- Speed
- Agility

**Metabolic Conditioning**
- Alactic
- Lactic / Glycolytic
- Oxidative
Key Movement Patterns

Parallel Lift
Split Lift
Push
Pull
Bend
Twist
Gait/Kinetic Link
Pattern 1: Parallel Lift

**Squat** (this is a Closed Kinetic Chain exercise)

+ knee lift (now includes Hip Open Kinetic Chain)
+ kick (now includes Hip & Knee Open Kinetic Chain)
  ....also requires Single Leg Stance = hip stability
  .... can intro weight acceptance (drop into squat) →
+ drop (this is for weight acceptance: a key role for the Lower Limb)
+ jump & land (more advanced weight acceptance)
+ combine with other movement patterns
  ...rotation
  ...upright row/throw/shoulder press
Pattern 2: Split Lift

Lunge – static
  + movement
    ....rear step first as this keeps loaded limb under tension for joint stabilisation
    ....forward step – remember ‘step, stop, down, up’
  + jump (this is for weight acceptance – direction forward, hop sideways, skater)
  + combine with other movement patterns
    ...rotation
    ...upright row/throw/shoulder press
Pattern 3: Push

Push up

+ walk (side/forward/backward - for shoulder stability + thoracic impedance: also Closed Kinetic Chain)
+ SMALL drop (this is for weight acceptance)
+ combine with other movement patterns
  ...rotation
  ...bend (tuck under)
  + rotation
  ...+ Pull (see One arm row and superman)
Pattern 4: Pull

....without equipment movements are predominantly Open Kinetic Chain = lifting weight of an arm rather than weight of the body...so more reps will be needed (or find some resistance like a water bottle or a partner)

**One arm row** (from plank or standing in Romanian Deadlift position)

  + external rotation

**Superman**

Combination one arm row/ER/reach (shoulder setting)

  + combine with other movement patterns

  ...rotation

  ...Push (Push Up)
Pattern 5: Bend

**Sit up** (full ROM) (ribs around hips – body over trunk flexion)

**Tuck under** (hips around ribs – body under trunk flexion)

**Lateral flexion**
- (plank adds shoulder stability in abduction – Good for load carriage by stabilising lateral movement – esp. Gmed/Min)

**Hip hinge**
- Single leg (ground touch - hamstring with CKC proprioception)
  - + combine with other movement patterns
    - ...Rotate pattern – Sit up with rotation
    - ...Push pattern - Push up (when doing tuck under)
    - ... Pull pattern - Row or Superman when doing ground touch
Pattern 6: Twist

....not often done in isolation esp around trunk = rotating on joints

Plank

....with braiding walk of legs (body under trunk rotation)
.... Reach under (body over trunk rotation)

+ combine with other movement patterns
...Bend pattern – Sit up with rotation / angled tuck unders
...Push pattern – Side plank (feet splayed) drop Push up and turn
Pattern 7: Gait/Kinetic Link

....many variations.

**Running man**
- Lateral movement
- Increased stability (rear foot stays off ground)
- Calf raise – unilateral triple extension
- Hop for weight acceptance
- Speed for power

**Climber**

**Jog + punch** (4 Jog, 4 Punch)
Pattern 7: Gait/Kinetic Link

Cable Punch / Pull
Full body complex movement session

**Burpee (modified)**
- single leg step back and forward for hip ROM...
- small tilt forward at bottom of squat to drop forward onto hands for weight acceptance
Full body complex movement session

Pommel
- Cardio with thoracic impedance
- Trunk rotation/flexion combo
- Shoulder stability
- Dexterity
Full body complex movement session

Stand up and sit down
Full body complex movement session

1. Modified Burpee
2. Pommel
3. Stand up and sit down (lie down)

Session dose = 20s/20s/20s x 4 = 4 minutes

Key points
– Aim for same number of reps 1st \(\rightarrow\) 4th Rotation
– Sit to stand...make it different each time (train the brain)
– Each repetition must be controlled and ‘clean’
Key Points

• Which movement pattern you are trying to achieve and what are you trying to achieve with it?
• What factors will impact on that pattern (eg balance and stability)?
• What profile (Speed, endurance, metcon)?
• How can you increase the value of the exercise?
References:


Pictures / photographs

- Australian Army pictures from Defence Media
- Pictures in Slides 19-21 from ASCA with permission
- All other pictures are open source
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