Use of Swim Power Test to Analyze Swimming Technique

Genadijus Sokolovas, Ph.D.,
Global Sport Technology, Inc

www.globalsporttechnology.org
info@globsport.org
SWIM POWER TEST

• The following information is collected and presented on the DVD:
  – Velocity (m/s) measured 60 times/second
  – Force (kg) measured 60 times/second
BENEFITS FROM THE SWIM POWER TEST

• Real time velocity measured 60 times/second at every point of the swimming cycle synchronized with underwater video
• Detailed analysis of swimming technique
• Drills to improve swimming technique
• A DVD with underwater video overlaid with swimming velocity curve
TESTING PROTOCOL

• The testing protocol includes three 25 meters efforts at race pace in various positions unique to the specific stroke analyzed:
  – Pull with buoy
  – Kick
  – Swim
PULL TEST
KICK TEST
SWIM TEST
INDIVIDUAL SWIM POWER SESSION

- Side and front view video with overlaid swimming velocity curve
- Multiple tests with immediate video feedback
- Real-time stroke corrections
- Digitizing the stroke
- Evaluating drag forces for different swim suits
FEEDBACK
Typical Mistakes in Freestyle Technique

- Head/Body Position
- Breathing
- Beginning of the Stroke
- Middle of the Stroke
- Kicking Technique
- Sighting Technique
Head/Body Position Mistakes

• High head position
• Low head position
• Watching forward
• Moving the head during the swim
• Head/shoulders above the surface – legs/feet low
• Body rotation
Head/Body Position Mistakes
Breathing Mistakes

• Head above the water
• Loss of balance
• Use arms/shoulders to rotate for the breathing
• Breaking the body line during the breathing
• Late breathing
Breathing Mistakes
Mistakes at the Beginning of the Stroke

• Entering arm too close to the head
• Pressing straight arm stroke down
• Pressing arm to the side
• “Dropping elbow”
Mistakes at the Beginning of the Stroke
Mistakes in the Middle of the Stroke

• S-shape hand pathway
• Bending elbow
• Moving hand in a circular pattern
• Swimming with arms only
Mistakes in the Middles of the Stroke
Mistakes in Kicking Technique

• Bending knees too much
• Too large amplitude kick
• Kicking down only
• Low ankle flexibility
• Crossing legs during the swim
Mistakes in Kicking Technique
Mistakes in Sighting Technique

- Lifting head too high
- Combining breathing and sighting
- Slow kicking during the sighting
- Pressing arm down during the sighting
Mistakes in Sighting Technique
FREESTYLE ANALYSIS

![Freestyle Velocity vs Time Graph]

- **Left Arm (A-D)**: Points A, B, C, D
- **Right Arm (D-A)**: Points D, E, F, A
TESTING DIFFERENT SWIMSUITS USING SWIM POWER TEST
FREESTYLE VIDEOS