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Art & SCIENCE

OF TRIATHLON

2012 INTERNATIONAL COACHING SYMPOSIUM



Use of Swim Power Test to Analyze Swimming Technique

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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

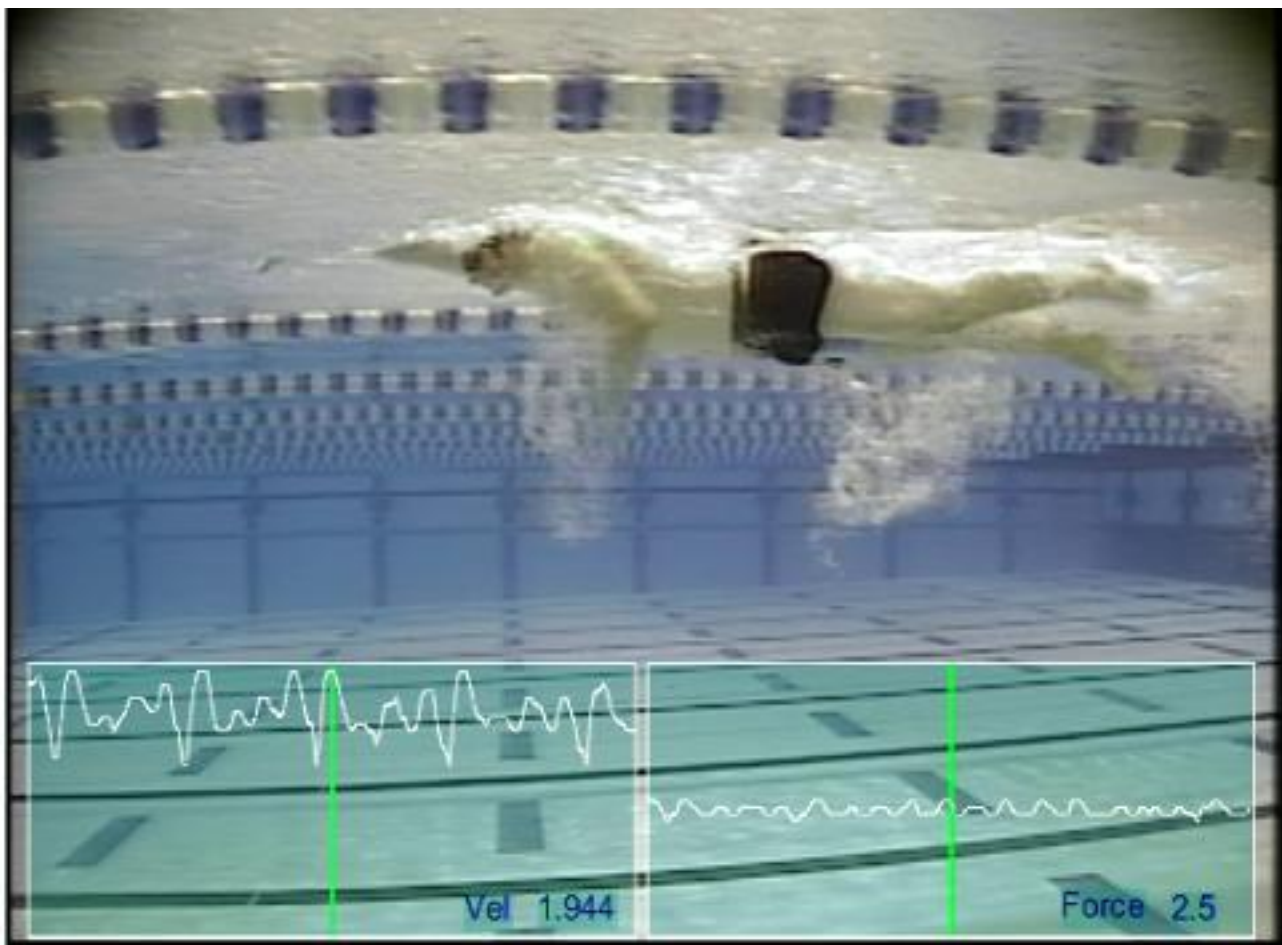
BENEFITS FROM THE SWIM POWER TEST

- 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

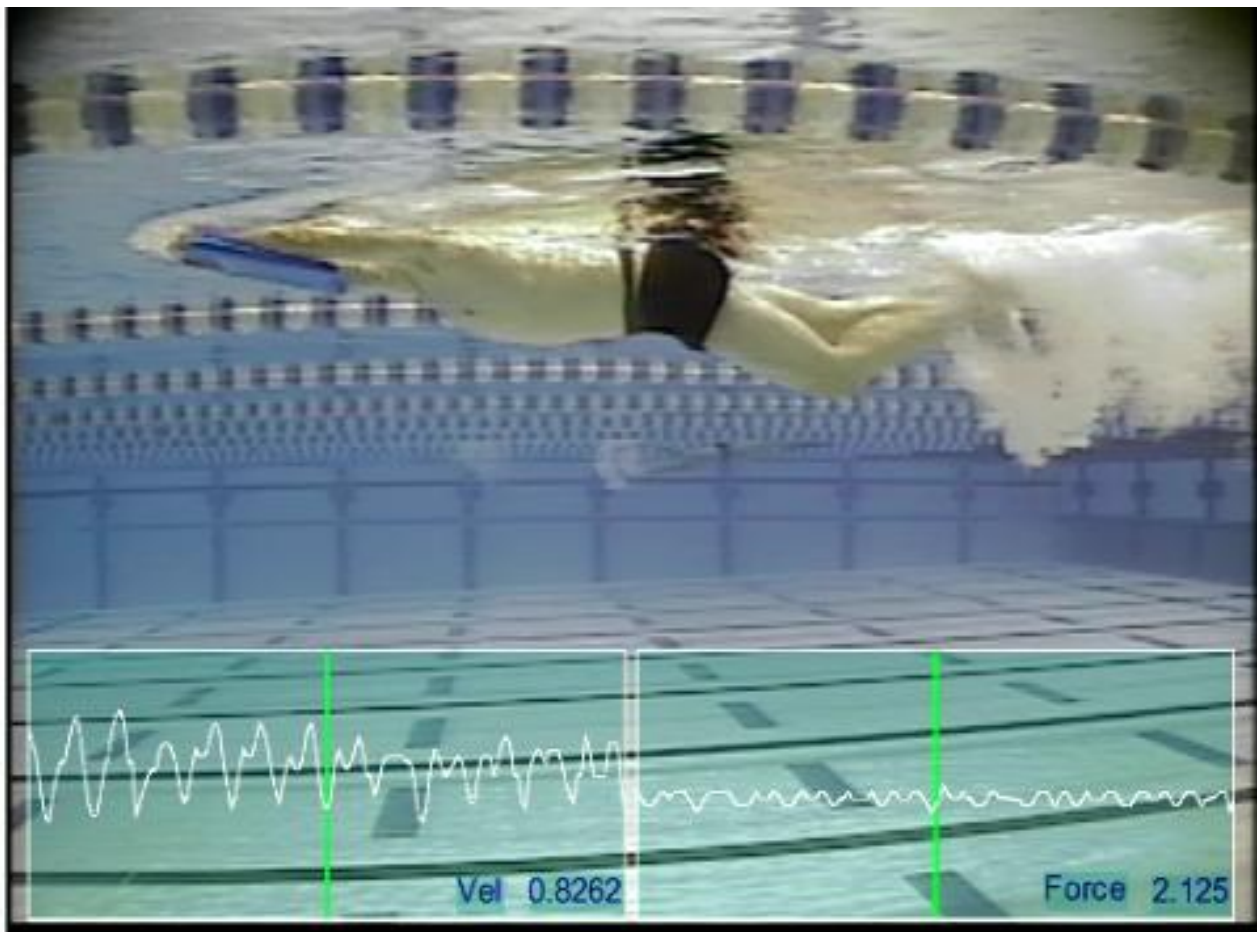
- The testing protocol includes three 25 meters efforts at race pace in various positions unique to the specific stroke analyzed:
 - Pull with buoy
 - Kick
 - Swim

PULL TEST



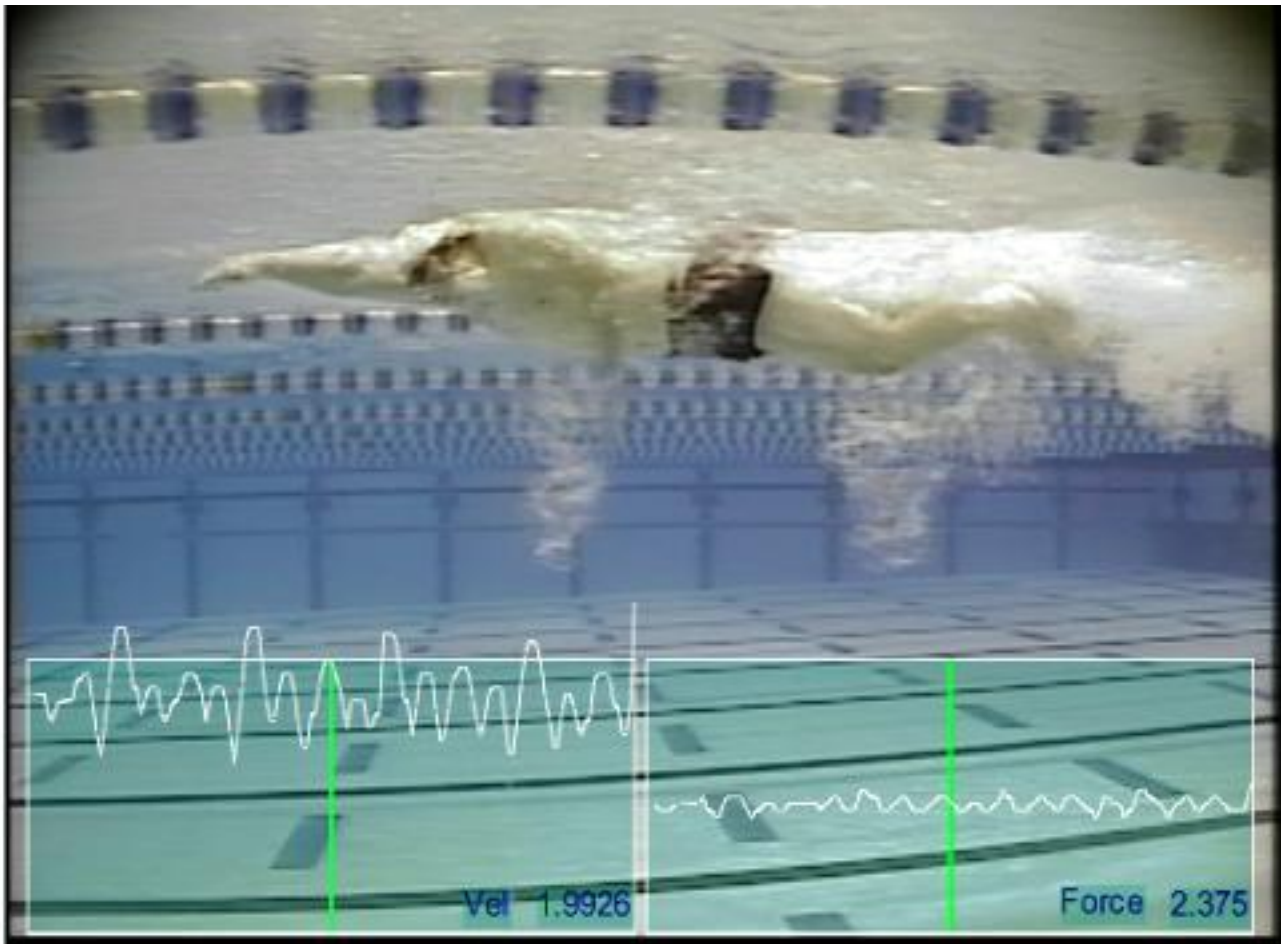
012

KICK TEST



012

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



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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

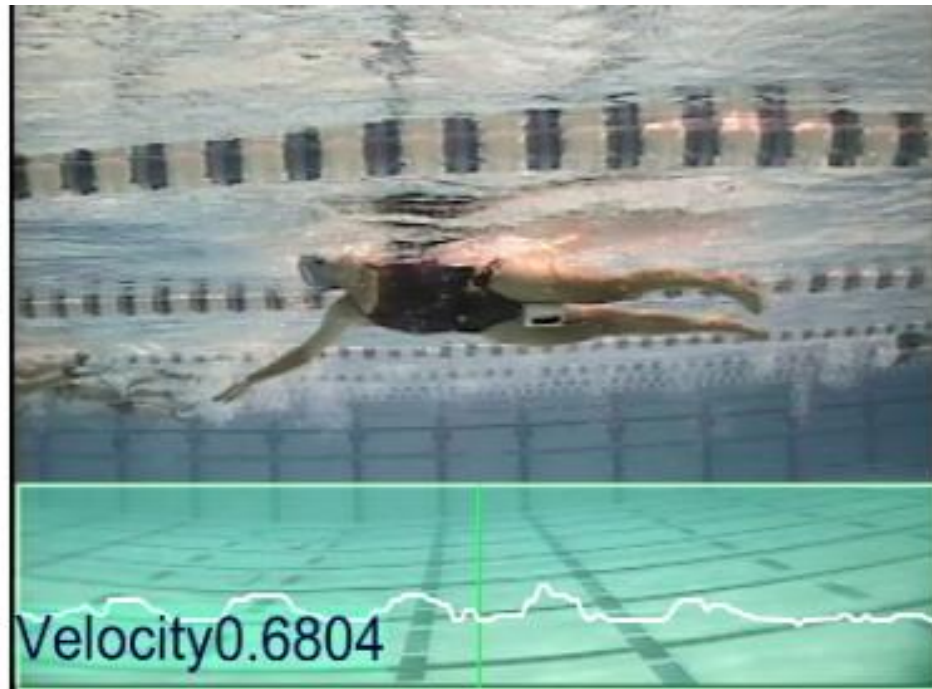
Head/Body Position Mistakes



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”

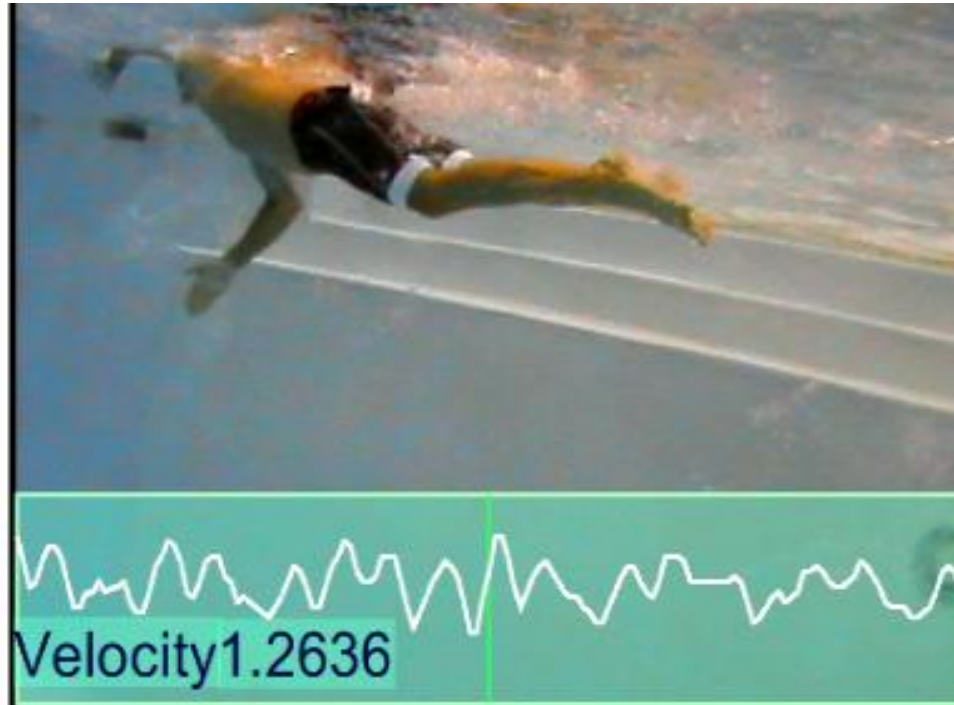
Mistakes at the Beginning of the Stroke



Mistakes in the Middle of the Stroke

- S-shape hand pathway
- Bending elbow
- Moving hand in a circular pattern
- Swimming with arms only

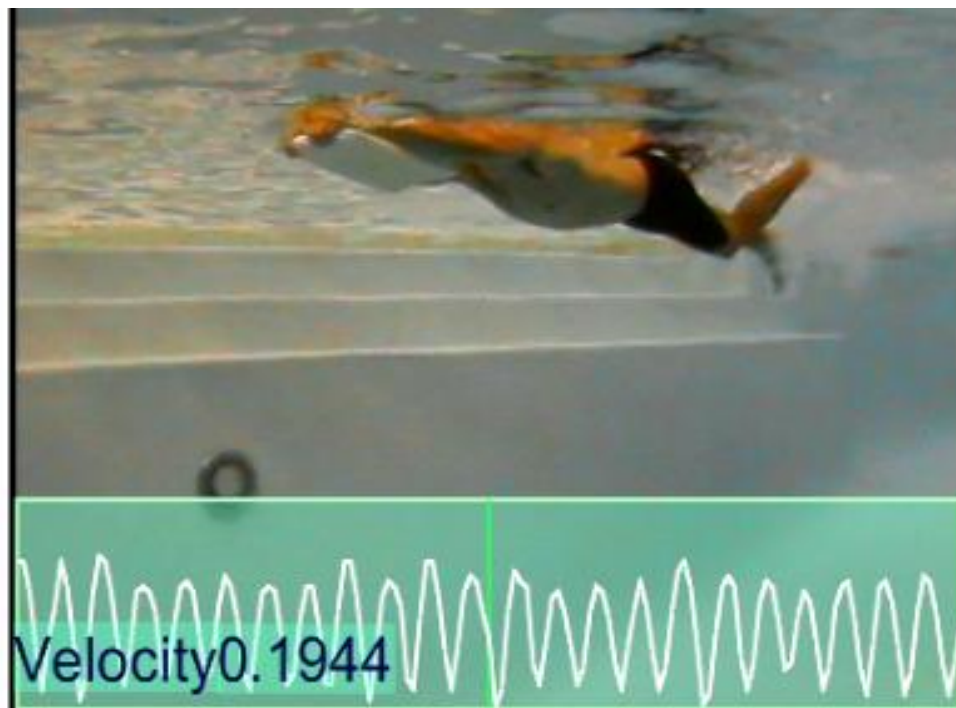
Mistakes in the Middles of the Stroke



Mistakes in Kicking Technique

- Bending knees too much
- Too large amplitude kick
- Kicking down only
- Low ankle flexibility
- Crossing legs during the swim

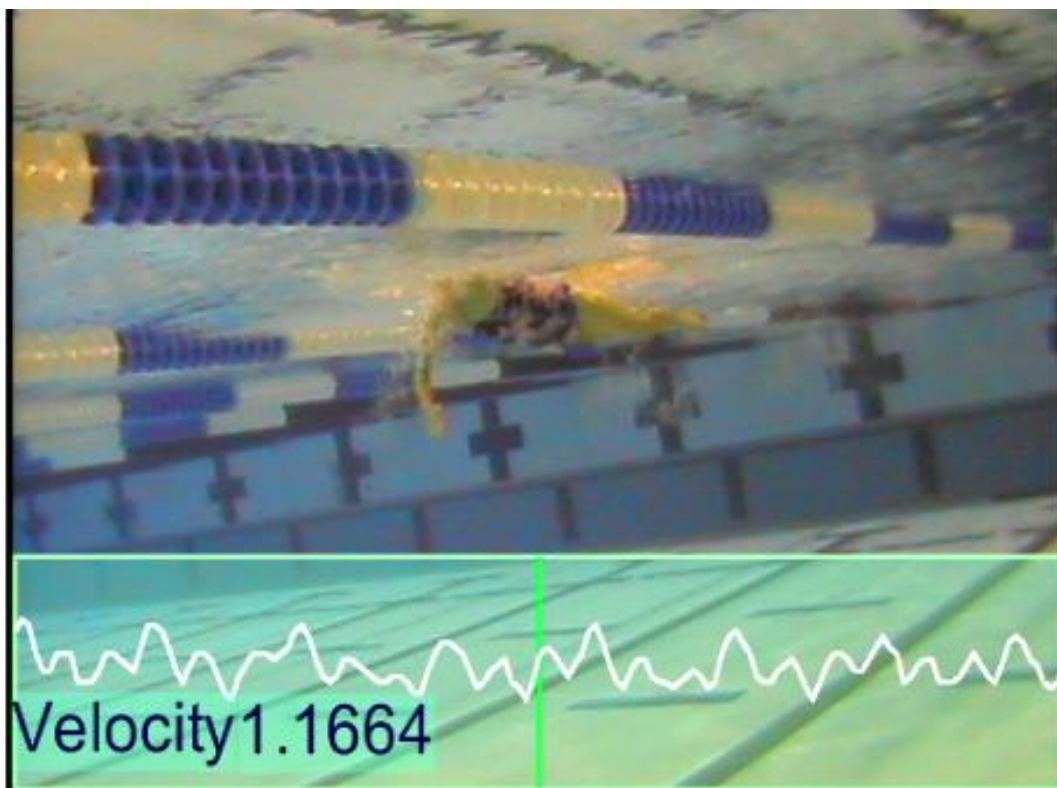
Mistakes in Kicking Technique



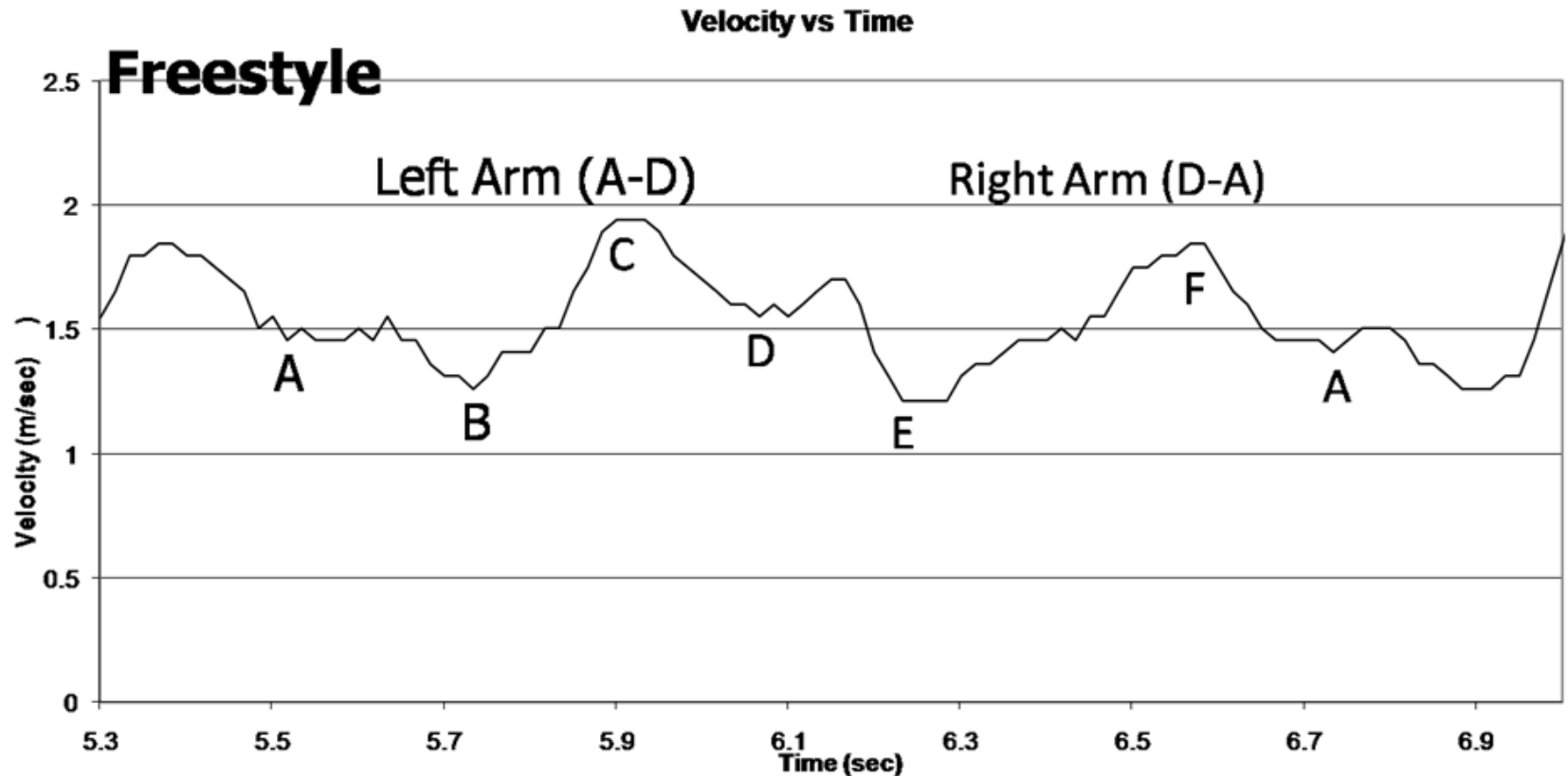
Mistakes in Sighting Technique

- Lifting head too high
- Combining breathing and sighting
- Slow kicking during the sighting
- Pressing arm down during the sighting

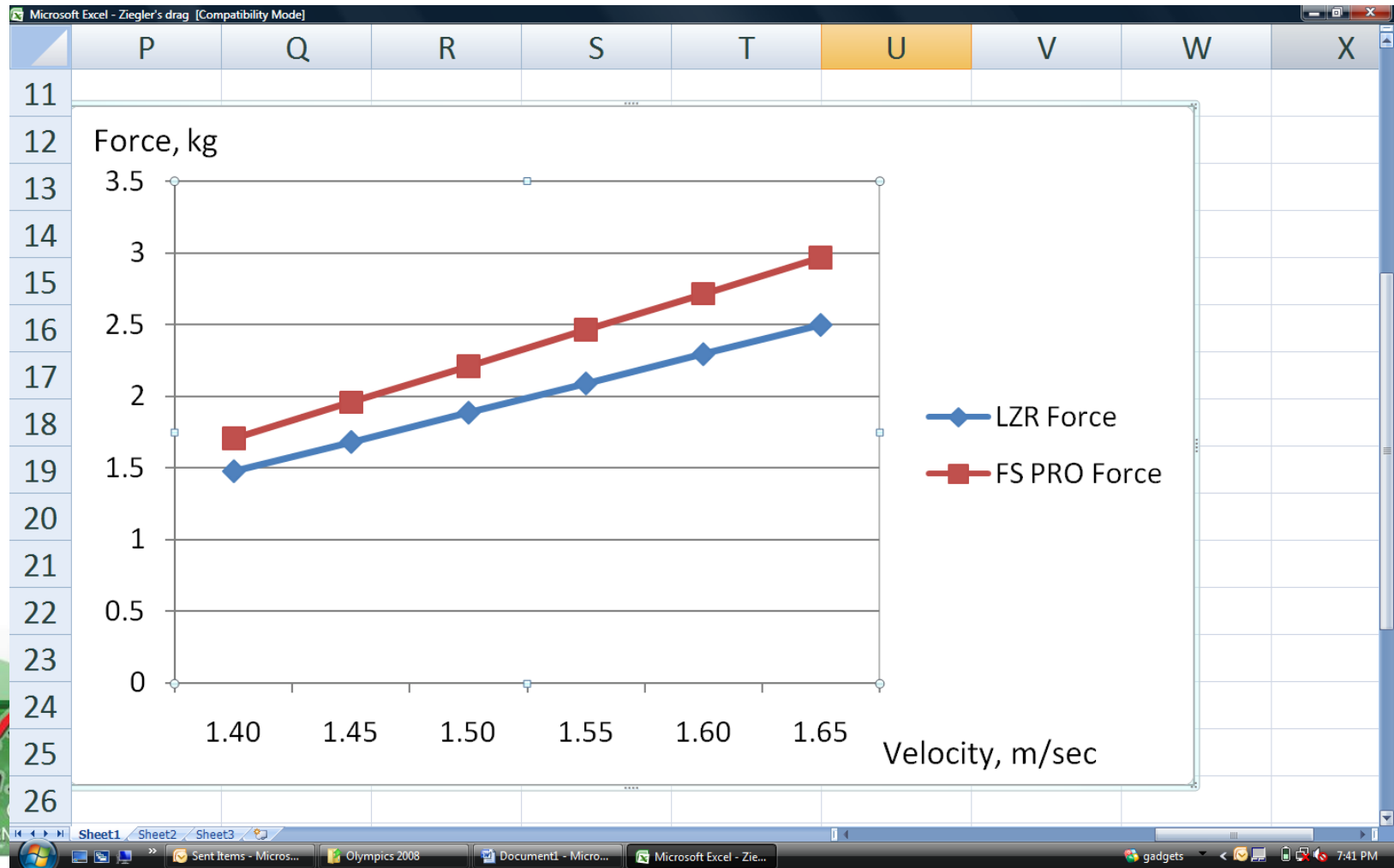
Mistakes in Sighting Technique



FREESTYLE ANALYSIS



TESTING DIFFERENT SWIMSUITS USING SWIM POWER TEST



FREESTYLE VIDEOS