

ProXR Ergonomic Bat Initial Testing Results

Batting Cages and Lab Work

Another Big Idea By Giant Project Inc.

Goal of Testing

Demonstrate the ProXR ergonomic baseball bat knob significantly reduces the pressure to the palm of the base hand resulting in increased grip stability, improved bat control delivering a quicker bat to the hitting zone.

Why?

By angling the knob of the bat to properly align with the natural motion of the hand during a swing, the debilitating pressure of a standard knob is dramatically reduced.



Think of a standard bat knob as a speed-bump which must be overcome to complete a swing.



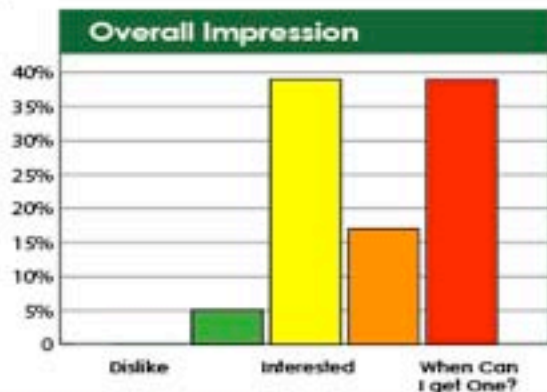
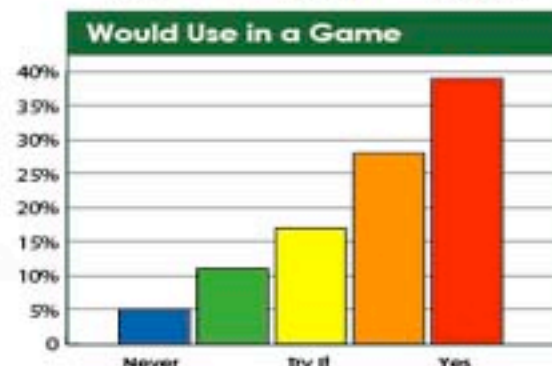
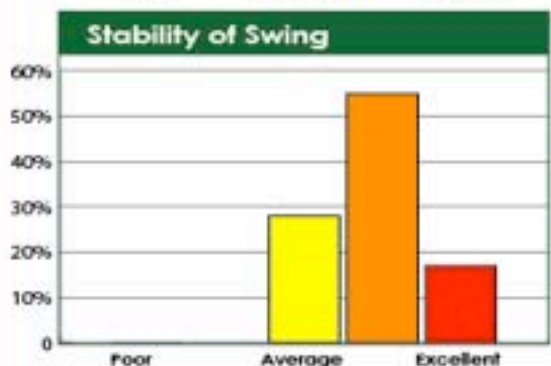
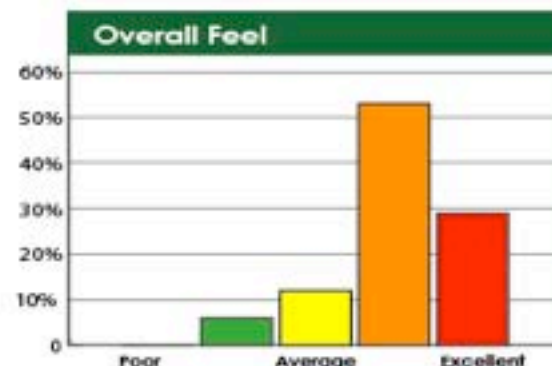
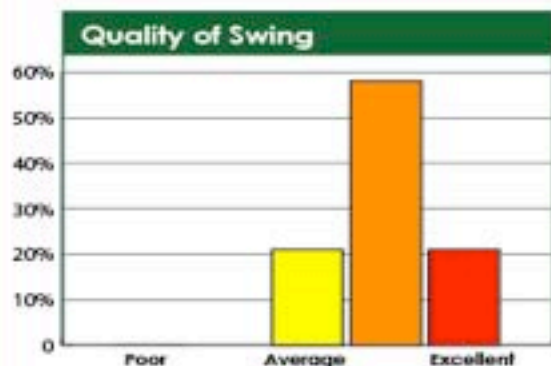
Testing in The Cages

Testing in the cages has shown a significant preference to the comfort and stability provided by the Ergonomic Bat Knob.

Test Results From The Cages



Test Results From The Cages



Player Response

“I definitely feel like I have quicker hands.”

“Impressive, I didn't expect the results.”

“The scientific approach, I like it.”

“I would definitely look to use it in the future.”

“I think it's a great idea, use my name.”

- *Whitey Herzog*

Testing In The Lab - June 6, 2006

- Phase One - Bat Knob Pressure Test
 - Washington University School of Medicine - Physical Therapy Lab
 - Mueller, Michael J., PT, PhD, FAPTA, Director of Applied Biomechanics Laboratory
 - Dr. Cheryl Caldwell - A., PT, DPT, CHT, Assistant Professor of Physical Therapy and Orthopedic Surgery

Testing In The Lab - June 6, 2006

- **The Technology**
 - Digital pressure-sensing software
 - Flexible matrix of tactile force sensors
 - Sampling thousands of sensors per second
 - Applied to the handle of the bats
 - Real-time viewing, capture and replay software

Testing In The Lab - June 6, 2006



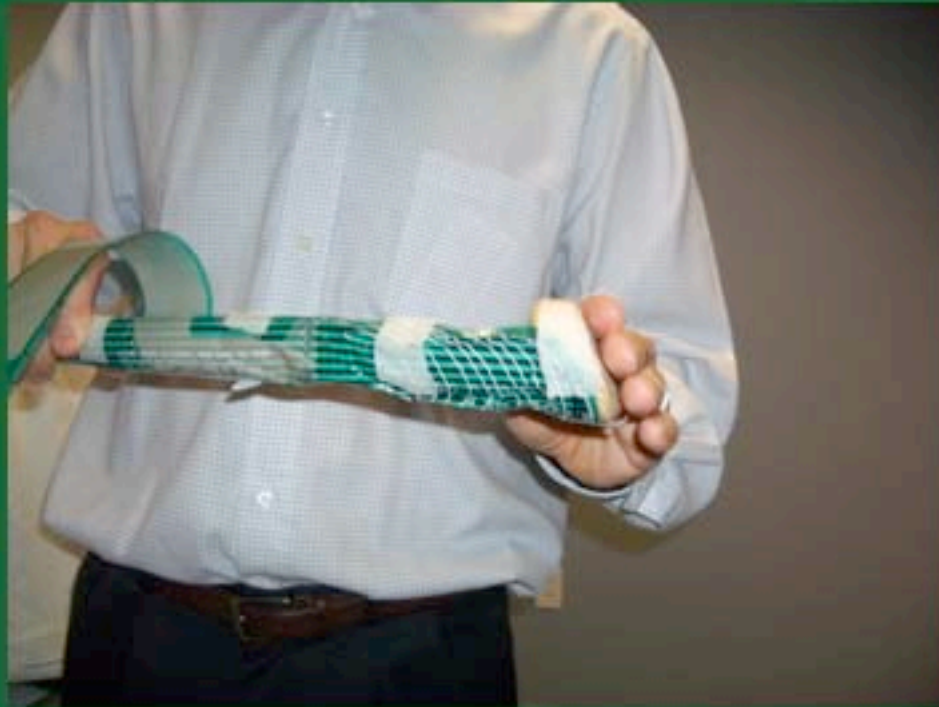
Wrapping the handle

Testing In The Lab - June 6, 2006



Adjusting Sensor Alignment

Testing In The Lab - June 6, 2006



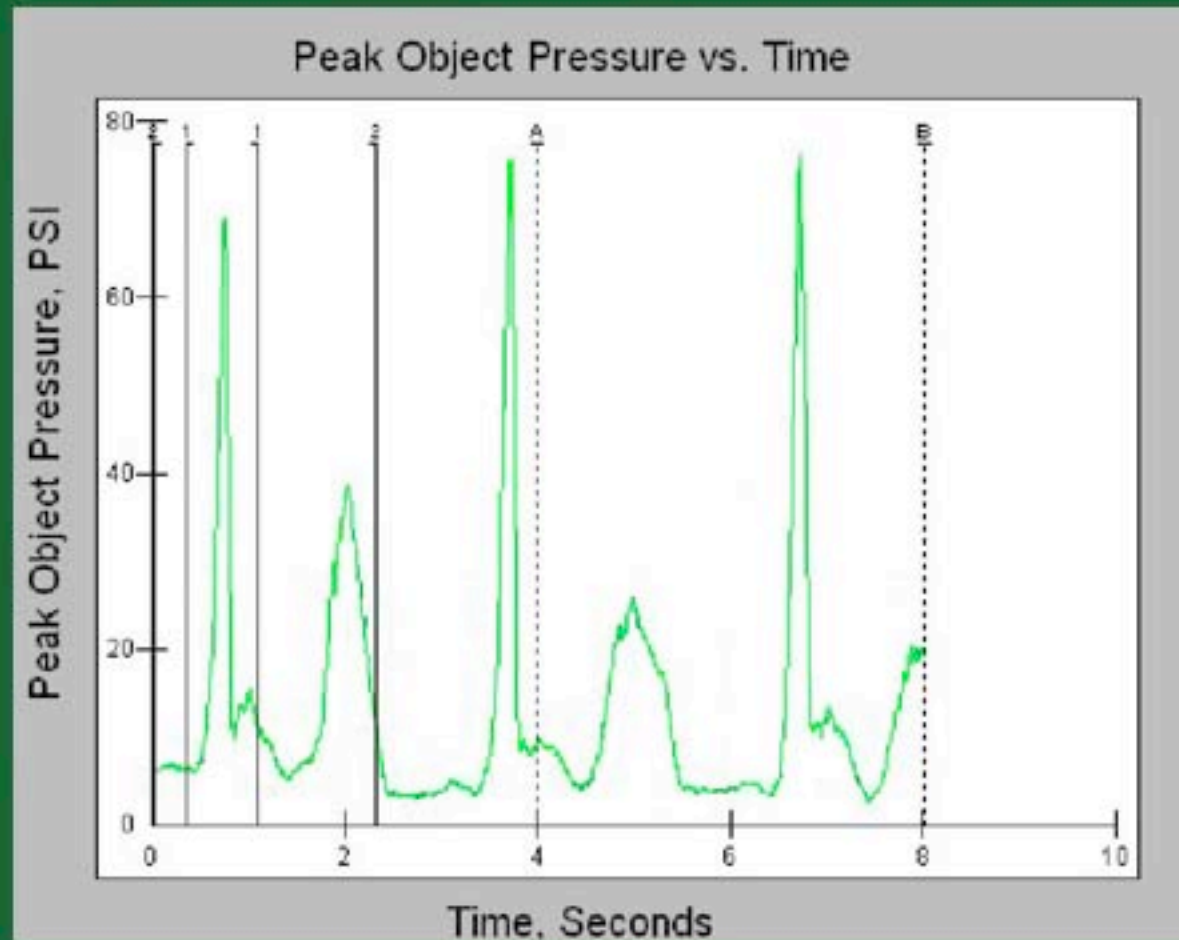
Ready To Swing

Initial Test Results

Swing Record With a Standard Bat Knob

Note: The green line represents the dynamic pressure applied by a standard knob on the targeted area of the base hand above the hamate

The high peaks occur during the swing at the point which the bat is fully extended in front of the batter

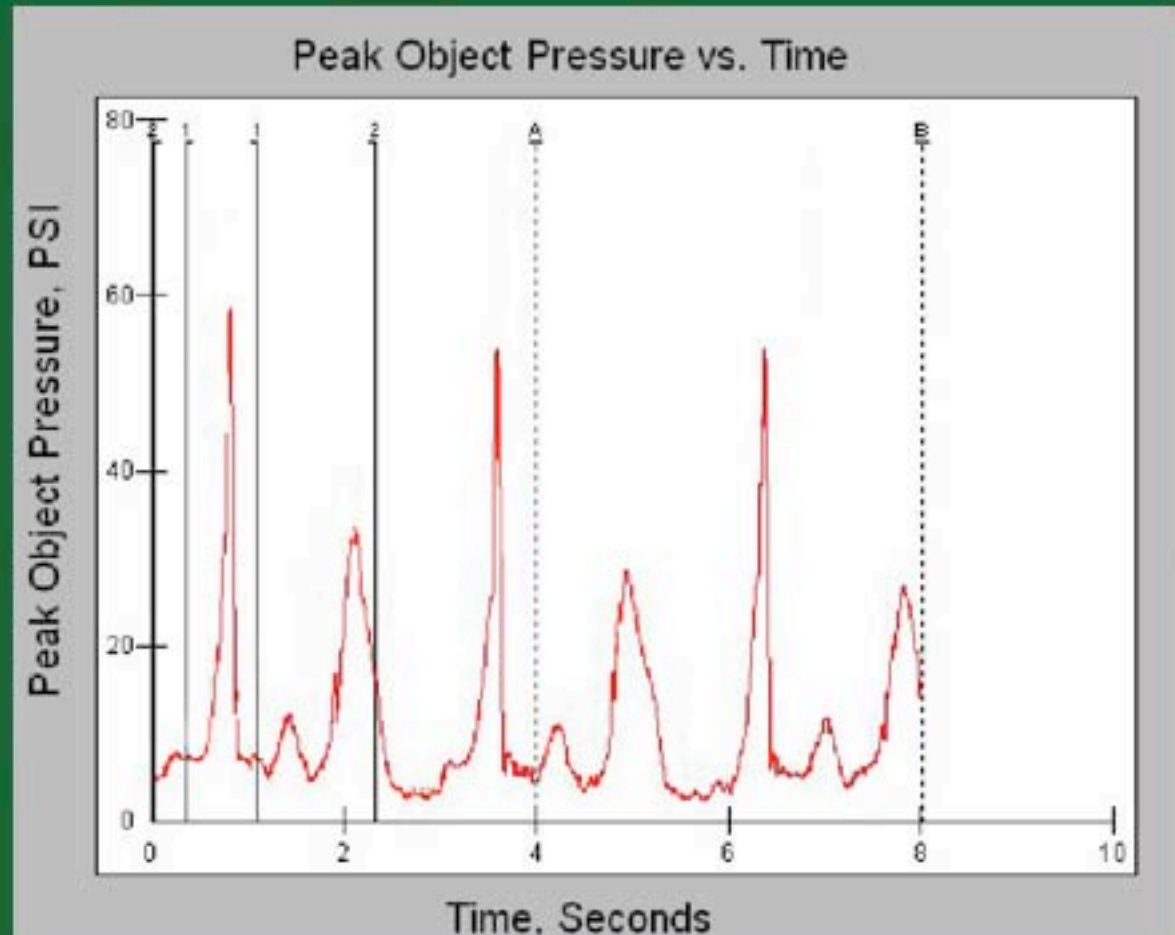


Initial Test Results

Swing Record With the Ergonomic Bat Knob

Note: The red line represents the dynamic pressure applied by the Ergonomic knob on the same area of the base hand as with the standard knob

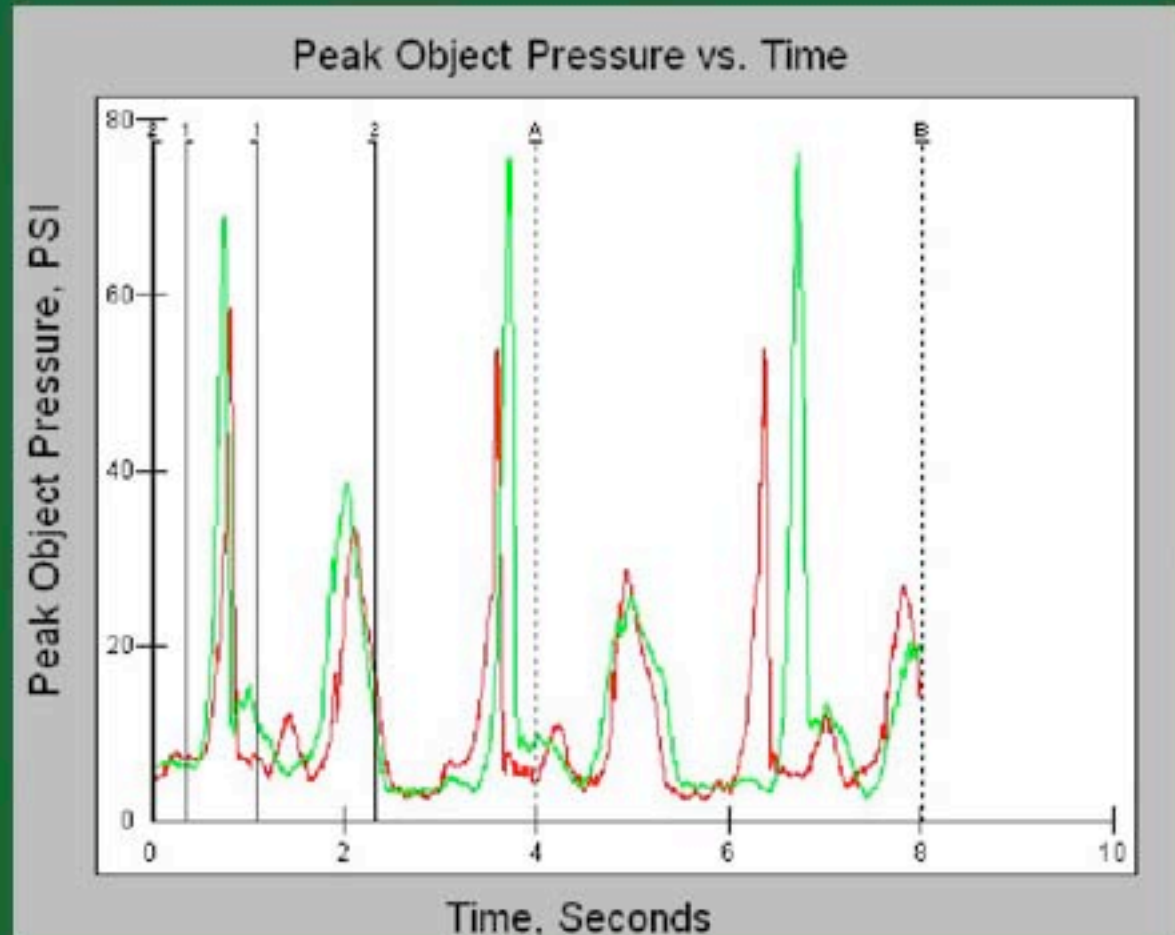
There is a noticeable difference in pressure between the two Knobs



Initial Test Results

Overlay of Both Records

There is roughly a 20% reduction in force with the Ergonomic Knob at the peak moment of pressure



Key Findings

- Ergonomic Knob Shows Significant Improvement Over Standard Knob Design
- The Knob does what it was intended to do
 - Reduce Pressure
 - Fewer Thrown Bats
 - Reduced Incident of Injury
 - Allow Freer Motion of Hands
 - Quicker Bat-To-Zone Performance
- Measurable validation of player testing from the cages

Contact ProXR



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