PROPORTIONS AND PROFILES…

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THE AGENDA
(Where We're Going)

- Introduction
- Section I Proportion Preferences
- Section II Profile Preferences
- Conclusions
- Challenge Project

References

- Published references
  - Turned-Bowl Design
  - The Art of Turned Bowls
  - Websites Galore
- Personal references
  - Too Numerous To List

Bowls, Bowls and More Bowls…

- I’ve Never Seen…
- But I’ve Often Seen…
- An Epiphany

The Five Human Senses

- Sight
- Touch
- Sound
- Taste
- Smell

Proportion

- Golden Section
- Golden Rectangle
- Golden Ratio
- Golden Proportion
- Divine Proportion
- Whatever…

The Rabbit Problem

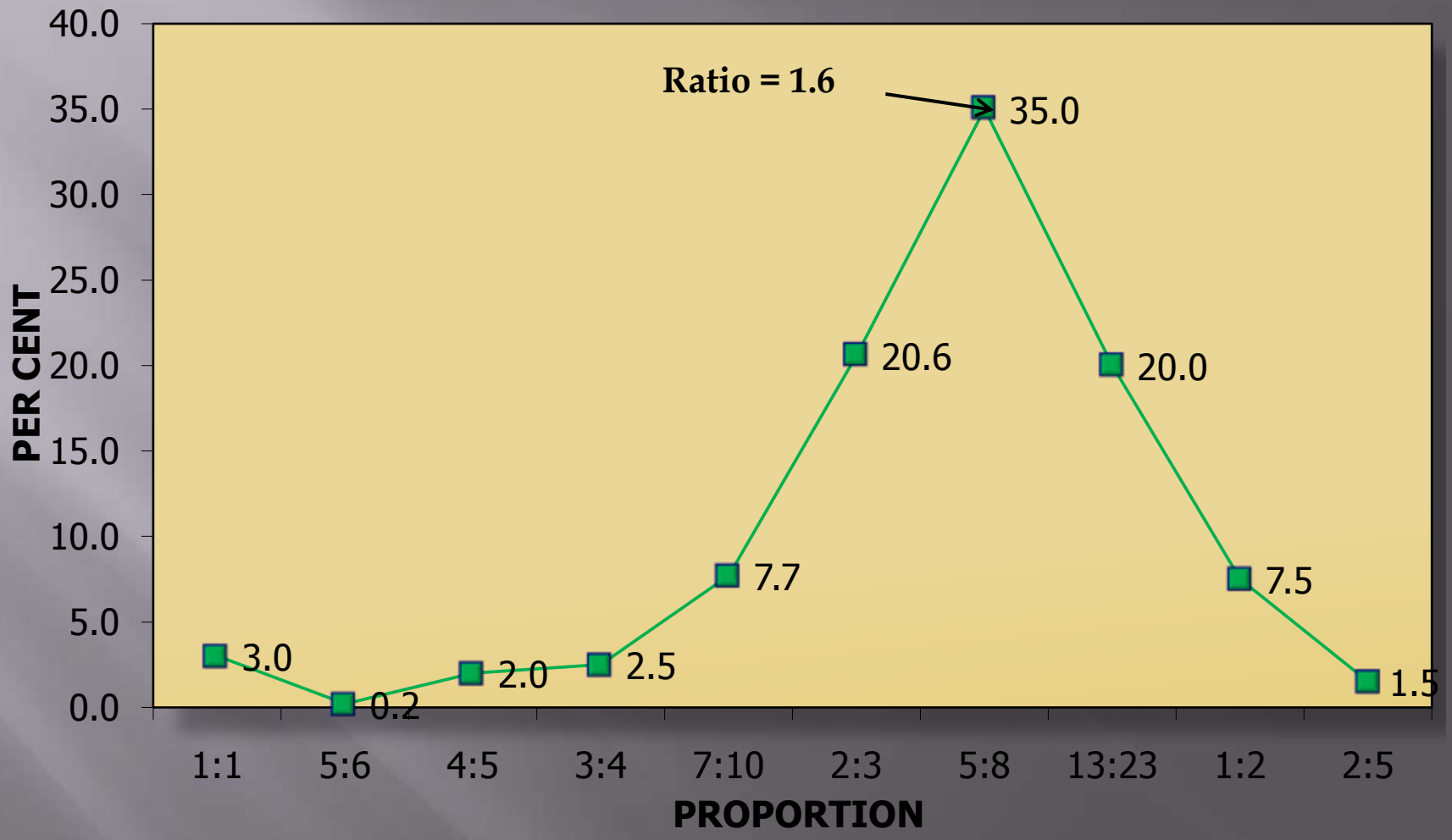
0	1	1	2	3	5	8	13	21	34	55	89	144	233	377	610	987	1597	2584
		1	2	1.5	1.67	1.6	1.63	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.618	1.618
	1	0.5	0.67	0.6	0.63	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.618	
4	5	9	14	23	37	60	97	157	254	411	665	1076	1741	2817	4558	7375	11933	19308
		1.8	1.56	1.64	1.61	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.618	1.618
	0.56	0.64	0.61	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.618	

http://library.thinkquest.org/27890/theSeries2.html
http://photobucket.com/images/rabbits/#!cpZZ5QQtppZZ16

Applications

- Psychology
- Every Day Life
- Art
- Architecture
- Human Anatomy
- Marine Biology

PROPORTION PREFERENCE



Every Day Life

NAME	PAGE	SHORT	LONG	RATIO
Osolnik	4	7	11	1.57
Lindquist	6	8	11.5	1.44
Ellsworth	23	6.63	10	1.51
Hoyer	33	3.13	6	1.92
Nish	60	9.75	10.75	1.10
Prestini	65	0.5	6.31	12.62
"	66	1.94	7.5	3.87
Stirt	71	4.31	7.19	1.67
"	72	4.5	10	2.22
Stocksdale	75	3.31	8.25	2.49
"	77	2.56	7.75	3.03
Straka	80	4.69	11	2.35
"	82	5.94	8.5	1.43
The Art Of Turned-Wood Bowls Jacobson 1987				

End of Section 1

Rude Osolnik: Deep footed "artichoke" bowl. 1982. Laminated wood. H. 9 13/16; Diam. (rim) 9 3/4"; Thickness .212"; Base (foot) 4 3/4".

Jacobson, Edward, *The Art of Turned-Wood Bowls.* First Edition. New York: E.P. Dutton, Inc.,1985

Profiles

"When You Cannot Express It In Numbers, Your Knowledge Is of a Meager and Unsatisfactory Kind."

Lord Kelvin (British Physicist 1824-1907)

My Profile Preferences

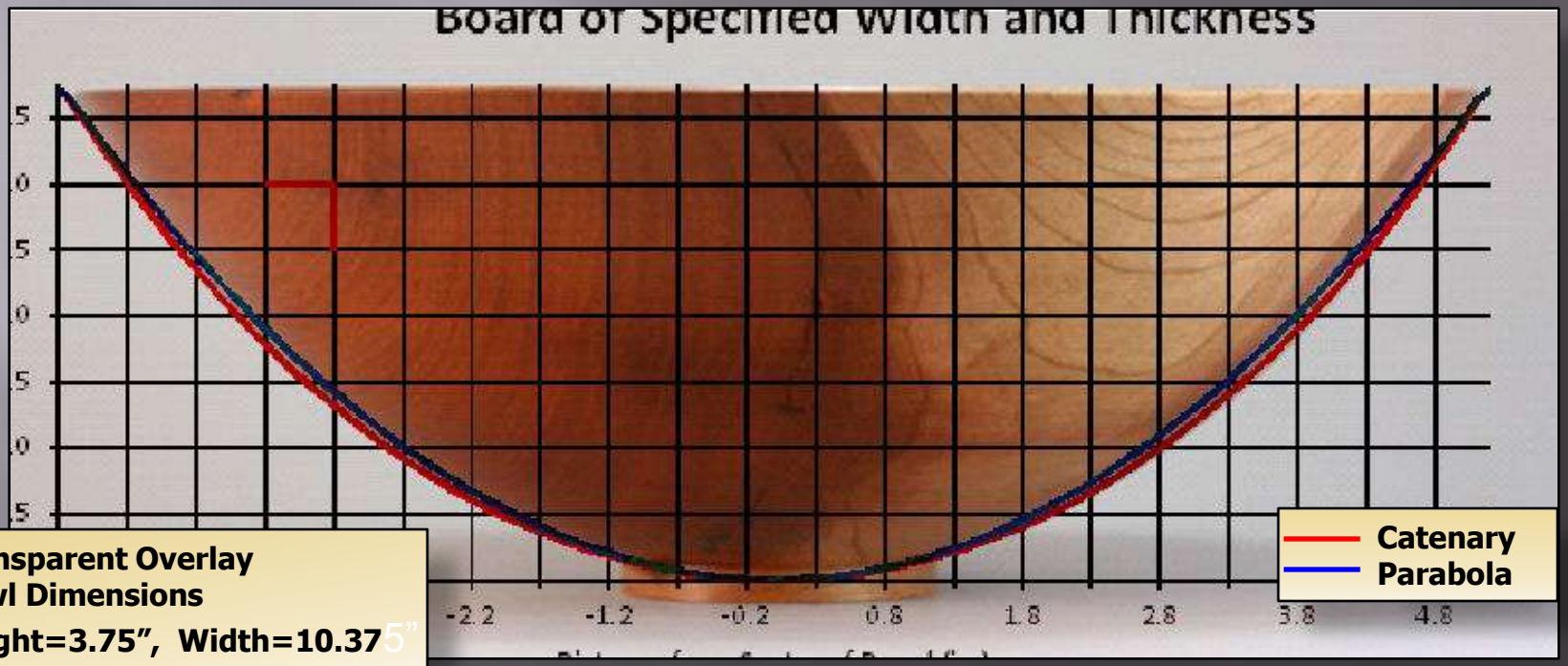
1a. Catenary Curves

1b. Parabolic Curves.

2. Circle-based Curves.

3. Elliptical Curves.

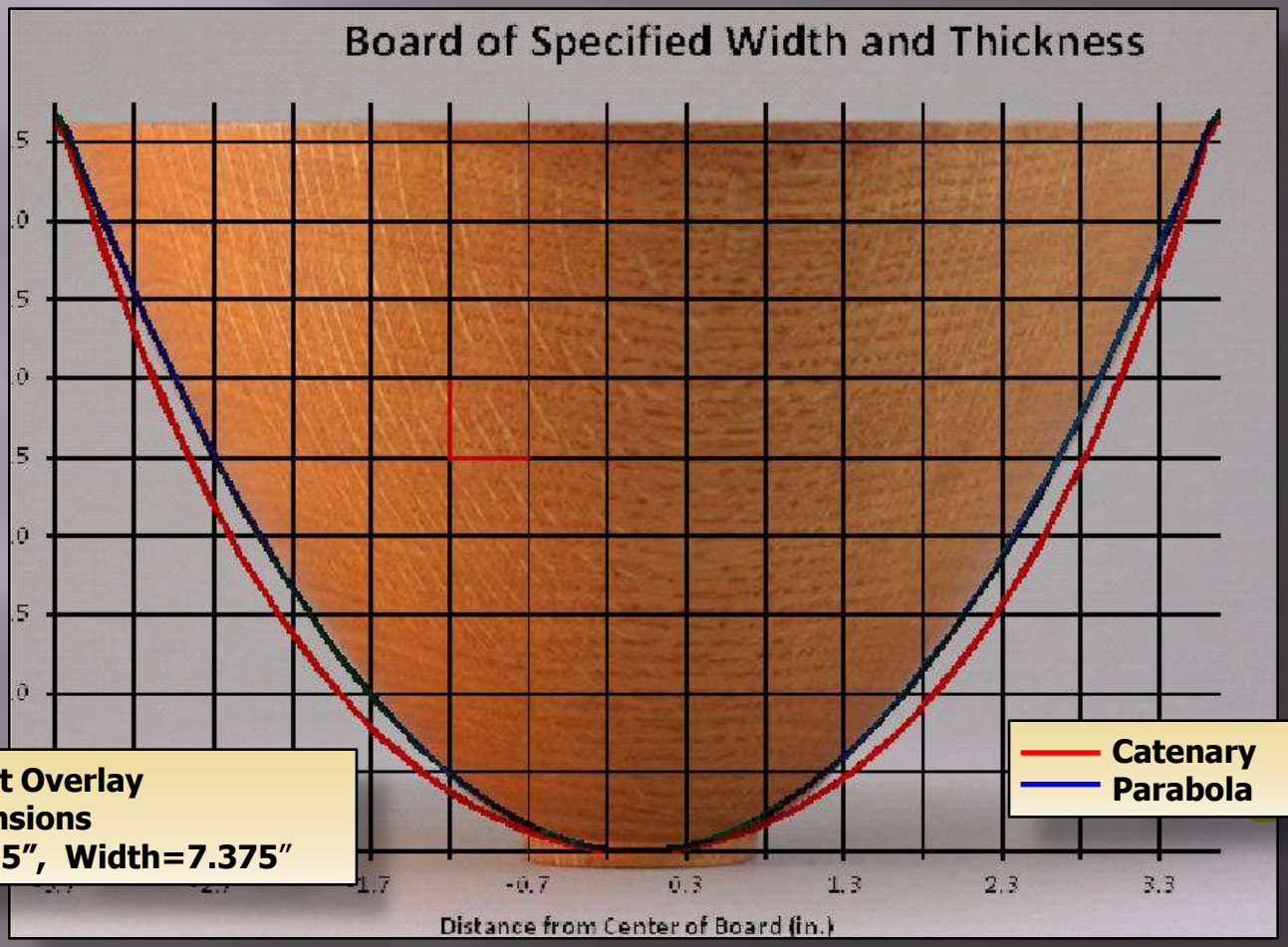
Catenary Curve
Preference 1 (Bowl 1)



Transparent Overlay
Bowl Dimensions
Height=3.75”, Width=10.375”

Notice the profile curve is included within the foot.

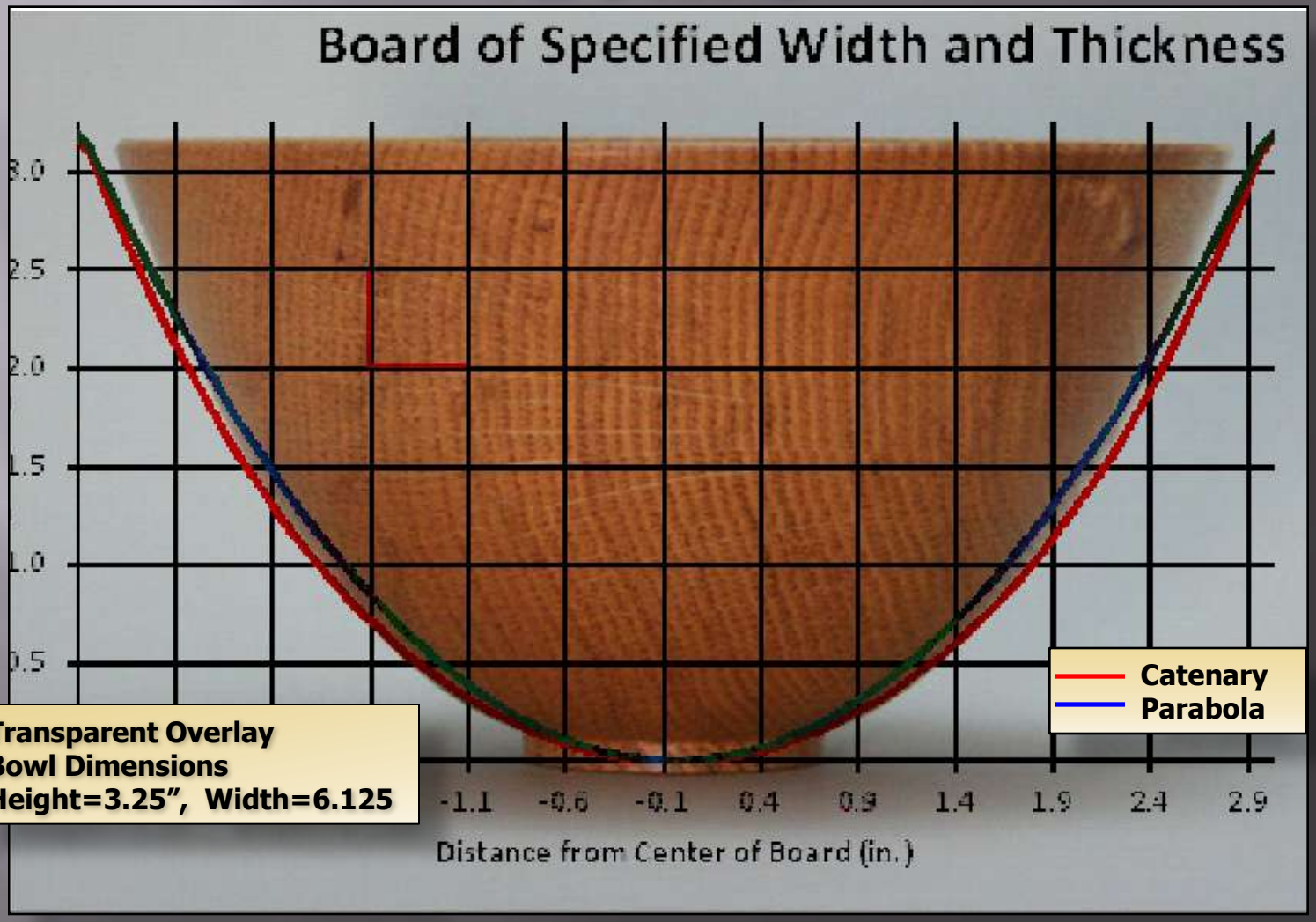
Parabolic Curves
Preference 2 (Bowl 2)



Transparent Overlay
Bowl Dimensions
Height=4.75”, Width=7.375”

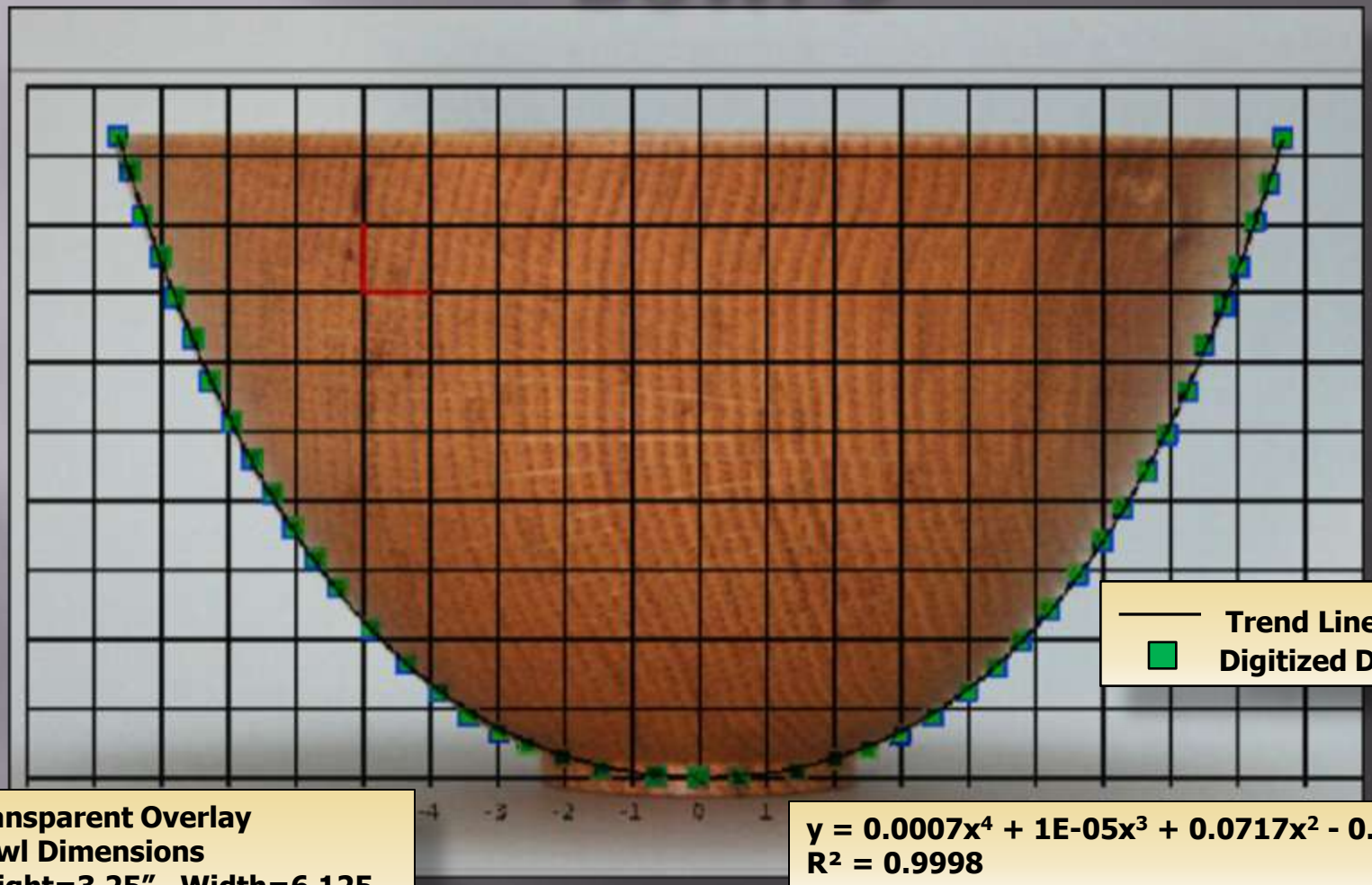
Notice the profile curve is included within the foot.

Neither Shape
Bowl 3



Notice the profile curve is included within the foot.

4th Order Polynomial Curve Fit Bowl 3



Transparent Overlay
Bowl Dimensions
Height=3.25”, Width=6.125

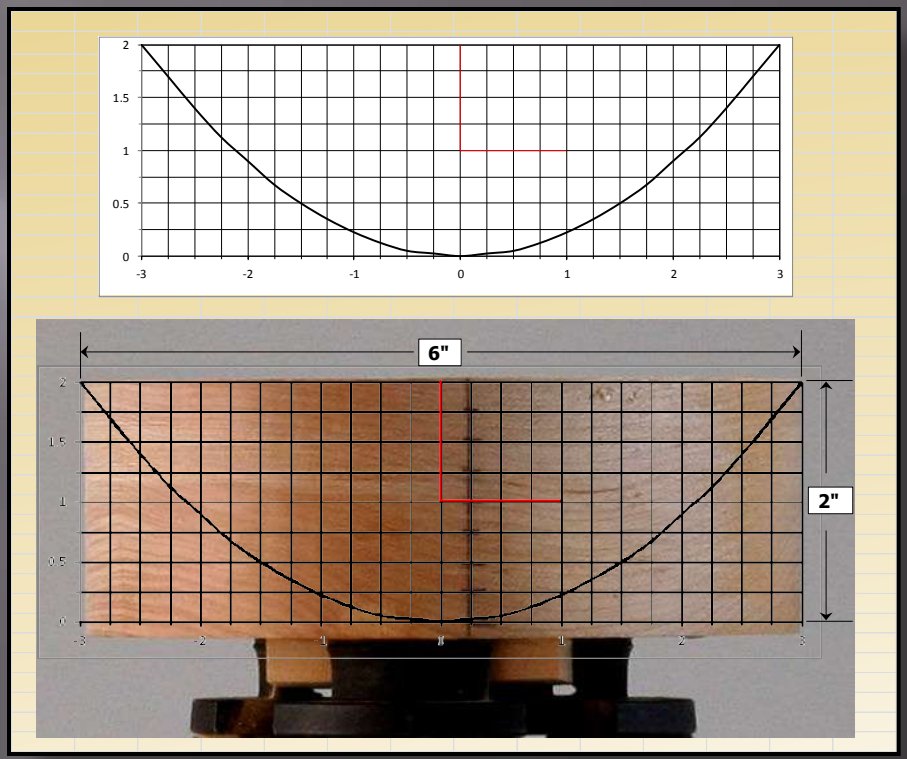
$y = 0.0007x^4 + 1E\text{-}05x^3 + 0.0717x^2 - 0.0096x$
$R^2 = 0.9998$

Time to Have a Fit…

Parabola Excel Worksheet

$y=ax^2$
y=height=8
x=radius=12
$a=y/x^2$
a=8/144=0.056
$y=0.056x^2$

a	Graph paper divisions		Actual size in inches	
	x	y	x/4*	y/4†
0.056	12	8	3	2
0.056	11	6.8	2.75	1.7
0.056	10	5.6	2.5	1.4
0.056	9	4.5	2.25	1.125
0.056	8	3.6	2	0.9
0.056	7	2.7	1.75	0.675
0.056	6	2	1.5	0.5
0.056	5	1.4	1.25	0.35
0.056	4	0.9	1	0.225
0.056	3	0.5	0.75	0.125
0.056	2	0.2	0.5	0.05
0.056	1	0.1	0.25	0.025
0.056	0	0	0	0
0.056	-1	0.1	-0.25	0.025
0.056	-2	0.2	-0.5	0.05
0.056	-3	0.5	-0.75	0.125
0.056	-4	0.9	-1	0.225
0.056	-5	1.4	-1.25	0.35
0.056	-6	2	-1.5	0.5
0.056	-7	2.7	-1.75	0.675
0.056	-8	3.6	-2	0.9
0.056	-9	4.5	-2.25	1.125
0.056	-10	5.6	-2.5	1.4
0.056	-11	6.8	-2.75	1.7
0.056	-12	8	-3	2



* Radius of block in inches
†Thickness of block in inches

How to do it

- Calipers
- Template
- Call a mentor

And Finally…

The Conclusion

Raffan Quote

"Techniques can be easily taught but design is another story. Yet it is probably the most important story in the arts and crafts. In woodturning, refined technique, choice of wood and grain pattern, as well as finish are icing on the cake but the heart of the issue is design. Without it, the project will never be first class."

Richard Raffan

Prestini Challenge

Picture Redacted
See below for a link to the original Prestini Challenge set

http://books.google.com/books?id=jv62D4i9Bp0C&pg=PA129&lpg=PA129&dq=james+prestini+salad+bowl&source=bl&ots=qTa3gatNib&sig=1tjWm0nPM9HBRRPGcKpj21735os&hl=en&ei=26dUTc7GAsGblgff3fSgBw&sa=X&oi=book_result&ct=result&resnum=1&sqi=2&ved=0CBsQ6AEwAA#

Oak Set