

Final Testing Data  
 Performed 5/10/11

Angle of attack measured using protractor  
 Flap angle measured with flap guides

**Heat shrink covered Balsa Wing**

Apparent wind angle: **90 degrees**

Angle of Attack	Flap Angle	Scale Intial (g)	Scale w/ fan (avg) (g)	Forward Force (grams)
15	20	499	295	204
10	20	499	250	249
10	10	499	295	204
10	25	499	280	219
5	20	499	325	174
15	15	499	295	204
Try to reproduce best				
<b>10</b>	<b>20</b>	499	260	<b>239</b> Max Reproduceable

**% over Soft 54%**

Apparent wind angle: **65 degrees**

Angle of Attack	Flap Angle	Scale Intial (g)	Scale w/ fan (avg) (g)	Forward Force (grams)
10	20	499	358	141
10	10	499	381	118
15	20	499	365	134
5	20	499	385	114
Try to Reproduce best				
<b>10</b>	<b>20</b>	499	357	<b>142</b> Max Reproduceable

**% over Soft 97%**

Apparent wind angle: **45 deg**

Angle of Attack	Flap Angle	Scale Intial (g)	Scale w/ fan (avg) (g)	Forward Force (grams)
5	15	499	411	88
12.5	15	499	402	97
10	20	499	412	87
15	20	499	429	70
5	10	499	441	58
10	25	499	414	85
Try to Reproduce Best				
<b>12.5</b>	<b>15</b>	499	400	<b>99</b> Max Reproduceable

**% over Soft 115%**

Apparent wind angle:     **30 deg**

Notes: lots of side force, duct tape does good job stopping slipping. Not best testing for water based boat...

Angle of Attack	Flap Angle	Scale Intial (g	Scale w/ fan (avg) (g)	Forward Force (grams)	
5	15	499	452	47	
0	20	499	473	26	
5	10	499	453	46	
10	10	499	440	59	
Try to Reproduce Best					
<b>10</b>	<b>10</b>	499	443	<table border="1"><tr><td>56</td></tr></table> Max Reproduceable	56
56					

**% over Soft N/A**

Main sail angle is angle between boom and cart  
Jib sail angle is angle between Jib boom and cart

### Soft Sail

Apparent wind angle: **90 degrees**

Main Sail Angle	Jib Sail Angle	Scale Intial (g	Scale w/ fan (avg) (g)	Forward Force (grams)
30	40	499	344	<b>155</b>

Apparent wind angle: **65 degrees**

Main Sail Angle	Jib Sail Angle	Scale Intial (g	Scale w/ fan (avg) (g)	Forward Force (grams)
20	20	499	427	<b>72</b>

Apparent wind angle: **45 degrees**

Main Sail Angle	Jib Sail Angle	Scale Intial (g	Scale w/ fan (avg) (g)	Forward Force (grams)
5	10	499	453	<b>46</b>

Apparent wind angle: **30 deg**

Note: Lots of side force, front wheel just slips sideways

Main Sail Angle	Jib Sail Angle	Scale Intial (g	Scale w/ fan (avg) (g)	Forward Force (grams)
2	5	499	499	<b>0</b>