



## SAMPE '07 Super Light Weight Bridge and Wing Building Contests

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The SAMPE '07 Symposium and Exhibition hosted the tenth annual Super Light Weight Bridge competition and the fourth annual Light Weight Wing competition. This year we pre-registered 34 Bridge teams and 21 Wing teams. Of these, 22 Bridges and 17 Wings showed up for testing. In addition, we had an outstanding display of student posters in the registration area.

The contests continue to have a healthy student participation. Although there was a drop off in total entrants from last years record 70 teams, that was not obvious based on the crowd of students around the Tinius Olsen test machine. We estimate that 100 students participated this year. Also this year we limited the bridge and wing competitions to students only. We will continue this policy next year.

Each year the rules change. This year, we asked each bridge team to predict their failure load based on sound engineering methods. Chris Chamis judged those analyses and noted that some were well based while others really "winged it". The later ones were disqualified from the prediction prizes. One noteworthy analysis that was done by students from the University of West Virginia will be presented in the next issue of the Journal. The four bridge categories were the same as last year – carbon kit, carbon non-kit, glass kit and natural fiber kit.

### Thank You to Our Sponsors

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NASA LaRC was the primary sponsor of the Wing contest again this year. The wing geometry this year required a constant airfoil cross section along its entire 24 inch length. The challenge was to build a wing that would weigh no more than 12 ounces (last years wing was 10 ounces) and would support a center load with a maximum 2.0 inch deflection. The wing holding the largest load was the winner.

Results for both contests are given in the table. More detailed results can be seen on the Tinius Olsen website.

All of the awards were given out at the Student Awards Breakfast on Wednesday, June 5<sup>th</sup>. In all, we gave away more than \$5500 in prize money as well as the usual assortment of composite tennis racquets and fishing rods. Another award was a composite training course from Abaris.

Once again, we thank our 45 sponsors for their support. They provided the materials for the kits and the cash and product hardware for the prizes. Tinius Olsen provided the tensile machine used to load the bridges at the Exhibition. We also acknowledge the very strong financial support from NASA Langley.





## SAMPE Bridge & Wing Building Contests - 2007

### Final Standings

Team	wt(lbs)	P(lbs)	P/wt	P predict
<b>Bridge - Carbon Kit</b>				
San Diego State U.	2.40	7470	3110	6500
US Naval Academy	1.54	4670	3030	7000
Univ. Washington	3.10	5990	1933	5200
Univ. Dayton	2.24	3120	1394	1100
Ceritos College	2.24	2270	1014	1500
NC State Univ.	4.10	3230	789	13000
Rutgers	1.64	932	569	1010
Penn State	2.68	1516	566	8700
Univ. Cincinnati	3.10	1156	373	600
<b>Bridge - Carbon Non-Kit</b>				
Univ. Washington	4.60	21300	4620	30000
Univ. Washington	4.74	19090	4030	26500
UC Santa Barbara	1.20	4750	3960	9000
UC Santa Barbara	0.92	3420	3720	5007
Univ. British Columbia	2.66	3460	1302	30000
Univ Nevada Las Vegas	2.14	1407	657	9000
Univ Nevada Las Vegas	1.26	526	418	5500
<b>Bridge - Glass Kit</b>				
Univ. Washington	5.40	16860	3120	13000
US Naval Academy	1.94	6020	3100	7000
West Virginia Univ.	3.84	6440	1678	8627
Ceritos College	1.96	1179	601	1500
<b>Bridge - Natural Fiber Kit</b>				
Univ. Washington	5.24	14620	2790	16000
NC State Univ.	4.00	2750	687	1600
<b>Wing</b>				
	<b>wt(lbs)</b>	<b>P max 2"</b>	<b>P/wt</b>	
Univ. Washington	0.44	1206	2740	
Univ. Washington	0.72	1909	2650	
Univ. Maryland	0.72	1465	2030	
UC Santa Barbara	0.62	1124	1813	
UC Santa Barbara	0.62	1061	1711	
UC Santa Barbara	0.50		1200	
Univ. Maryland	0.66	713	1080	
UC Santa Barbara	0.54	593	1048	
San Diego State U.	0.74	670	905	
Univ. Maryland	0.40	303	758	
Univ. Auckland	0.62	335	540	
Univ. Nevada Reno	0.64	561	405	
Univ. Nevada Las Vegas	0.62	239	386	
UC San Diego	0.70	253	362	
Univ. Maryland	0.68	230	339	
Univ. Nevada Las Vegas	0.68	163	240	
<b>Posters - wing</b>				
UC Santa Barbara	1			
Univ. Nevada Las Vegas	2			
Univ. Nevada Las Vegas	3			
Univ. Maryland	4			
<b>Posters - bridge</b>				
UC Santa Barbara	1			
UC Santa Barbara	2			
Univ. Nevada Las Vegas	3			
Univ. Washington	4			

