CESSNA / STUDENT
ONR / DESIGN/BUILD/FLY
COMPETITION
An AIAA Student Activity

The 2004 Cessna/ONR Student Design/Build/Fly competition was held at the Cessna East Field facility in Wichita Kansas over the weekend of 23-25 April. Twenty six teams from the United States, Canada, Italy and Turkey attended the fly-off portion of the contest. Of the 26 teams attending the fly-off competition, 21 made at least one successful scoring flight attempt, with many teams completing the maximum allowed 5 flights during the two days of competition. A portion of Saturday was consumed by rain, which seems to be a DBF tradition, but Sunday provided perfect flying weather.

The design objective for this years competition was to create an airplane that would fit in a 2 x 4 x 1 foot shipping container and could complete a fire bomber mission and a ferry mission in the minimum amount of time. Each mission was assigned it's own Degree of Difficulty multiplier factor. The total score for each team is comprised of their flight performance on their best single flight of each mission type, their score on a written report documenting their aircraft design and selection, and a "Rated Aircraft Cost" representing the complexity and manufacturing costs of their design.

New to the competition this year, the Design Engineering Technical Committee sponsored prizes for the top five teams in the form of copies of their Aerospace Design Engineering Guide handbook. This additional support, above and beyond their participation as one of the administering Technical Committees, is greatly appreciated.

The final results showed a close battle between the two teams from Oklahoma State University, with Team Black the final victor. The University of Southern California team placed third . This is only the second time in the contest history the team with the highest paper score, 94.9, has also won the overall competition (Utah State University also had top paper and won the 2000 competition).

The final positions and scores for all of the competing teams are listed in the table below.

More details on the 2004 competition objectives and rules can be found at the contest web site at http://www.ae.uiuc.edu/aiaadbf .

Position	University	Entry Name	Paper Score	RAC	Bomber Score	Ferry Score	Flight Score	Total Score
1	Oklahoma State University	OSU Black	94.90	6.74	11.73	0.37	12.10	170.46
2	Oklahoma State University	OSU Orange	80.53	6.71	11.66	0.29	11.95	143.49
3	University of Southern California	Scquirt	84.85	8.62	10.07	0.00	10.07	99.13
4	University of Illinois Urbana/Champaign	Fiberglass Overcast	93.65	9.51	9.39	0.34	9.73	95.82
5	Cal Poly San Luis Obispo	Moist	91.50	7.84	7.53	0.44	7.98	93.08
6	La Sapienza Rome	Galiieo V	90.80	9.04	3.87	0.31	4.18	42.02
7	Queen's University	Squirt	86.05	6.57	2.74	0.37	3.11	40.65
8	Virginia Tech	Turbulence Syndrome	88.25	15.40	4.58	0.18	4.76	27.30
9	University of Florida	Swamp Stuka	62.23	12.56	5.20	0.21	5.41	26.83
10	Western Michigan University	Yeager - Bomber	70.00	20.27	5.21	0.22	5.42	18.72
11	Mississippi State University	Phyxius	88.10	9.50	1.50	0.38	1.88	17.41
12	University of California Los Angeles	ENGINuity-IGI	64.00	15.45	1.43	0.30	1.73	7.17
13	Clarkson University	Kamikazes	90.00	17.21	0.98	0.24	1.22	6.38
14	Georgia Institute of Technology	Buzzweiser	92.50	7.21	0.00	0.36	0.36	4.64
15	Cal Poly Pomona	Paani Hawaii Jahaz	76.05	16.26	0.47	0.20	0.66	3.10
16	University of California San Diego	Rain of Terror	91.00	9.74	0.00	0.24	0.24	2.21
17	Washinton State University	Spirit of Procrastination	85.50	8.72	0.00	0.17	0.17	1.71
18	Case Western Reserve University	Flying Nemo	80.70	12.30	0.00	0.22	0.22	1.45
19	West Virginia University	Right Flyer	54.50	13.90	0.00	0.27	0.27	1.05
20	Columbia University	The Leaking Lion	67.00	15.80	0.00	0.24	0.24	1.03
21	University of Central Florida	Poseidon's Fury	87.25	12.55	0.00	0.11	0.11	0.80
22	La Sapienza Rome	Michelangelo	84.45	15.04	0.00	0.00	0.00	0.01
23	Istanbul Technical University	ATA-5	77.68	17.87	0.00	0.00	0.00	0.00
24	University of Texax Arlington	Volantis	63.87	17.50	0.00	0.00	0.00	0.00
25	University of Arizonia	Aircat 2004	68.00	18.99	0.00	0.00	0.00	0.00
26	West Virginia University	Sting Ray	33.50	15.82	0.00	0.00	0.00	0.00
27	University of Texax Austin	121.5	88.50	100.00	0.00	0.00	0.00	0.00
28	City College of New York/CUNY	Rhino	87.00	100.00	0.00	0.00	0.00	0.00
29	Middle East Technical University	Anatolian-Craft	83.00	100.00	0.00	0.00	0.00	0.00
30	University of California Los Angeles	Aquanaut	79.50	100.00	0.00	0.00	0.00	0.00
31	Cal Poly Pomona	Death from Above	78.80	100.00	0.00	0.00	0.00	0.00
32	University at Buffalo	Buffalo Bomber	76.00	100.00	0.00	0.00	0.00	0.00
33	Miami University	Swoop-a-Loop	68.45	100.00	0.00	0.00	0.00	0.00
34	United States Military Academy	Boombatz Grandioso	65.15	100.00	0.00	0.00	0.00	0.00

35	University of Colorado	Water Buffalo	64.75	100.00	0.00	0.00	0.00	0.00
36	University at Buffalo	MAX DRAG	59.00	100.00	0.00	0.00	0.00	0.00
37	West Point	Knight Wings	43.85	100.00	0.00	0.00	0.00	0.00

The success of the competition required the efforts of many individuals. Our first thanks goes to the judges who assisted in the operation, technical inspections and scoring of the flight competition; and to the many judges who evaluated and scored the teams written proposal reports. Thanks also go to the Applied Aerodynamics, Aircraft Design, Design Engineering, and Flight Test Technical committees of the AIAA who organized and manage the competition, and the AIAA Foundation for their administrative support. Thanks is also due to the competitions corporate supporters, the Cessna Aircraft Company and the Office of Naval Research. A special thanks goes to Cessna for hosting this years event and providing access to their facilities for both hanger space and the flying field.

Overall the 2004 Cessna/ONR Student Design/Build/Fly competition marked another very successful event, allowing the participating students to mix a highly enlightening educational experience with a good dose of fun. Congratulations to all the teams who participated for your great enthusiasm and achievement.

See you next year - Greg Page: Contest Administrator