



# **Cessna Aircraft Company Raytheon Missile Systems AIAA Foundation**

The 2010 Cessna/Raytheon Missile Systems Design/Build/Fly Competition Flyoff was held at Cessna Field in Wichita, KS on the weekend of April 16-18, 2010. This was the 14<sup>th</sup> year the competition was held, and participation continued to increase from past years. A total of 69 teams submitted written reports to be judged. 65 teams attended the flyoff all of which completed the technical inspection and 62 teams made at least one flight attempt. More than 600 students, faculty, and guests were present. Good weather allowed for non-stop flights each day with a total of 179 flights during the weekend. 46 Teams were able to obtain a successful scoring flight. Overall, the teams were better prepared for the competition than ever before, which was reflected in the number and quality of the written reports, teams attending the flyoff, completing tech and flying the missions. A historical perspective of participation is shown below.

The primary design objective for this year was to accommodate random payloads of mixed size softballs and bats. A delivery flight was first required, where the airplane was flown with no payload. As usual, the total score is the product of the flight score and written report score. More details on the mission requirements can be found at the competition website: <http://www.ae.uiuc.edu/aiaadbf>

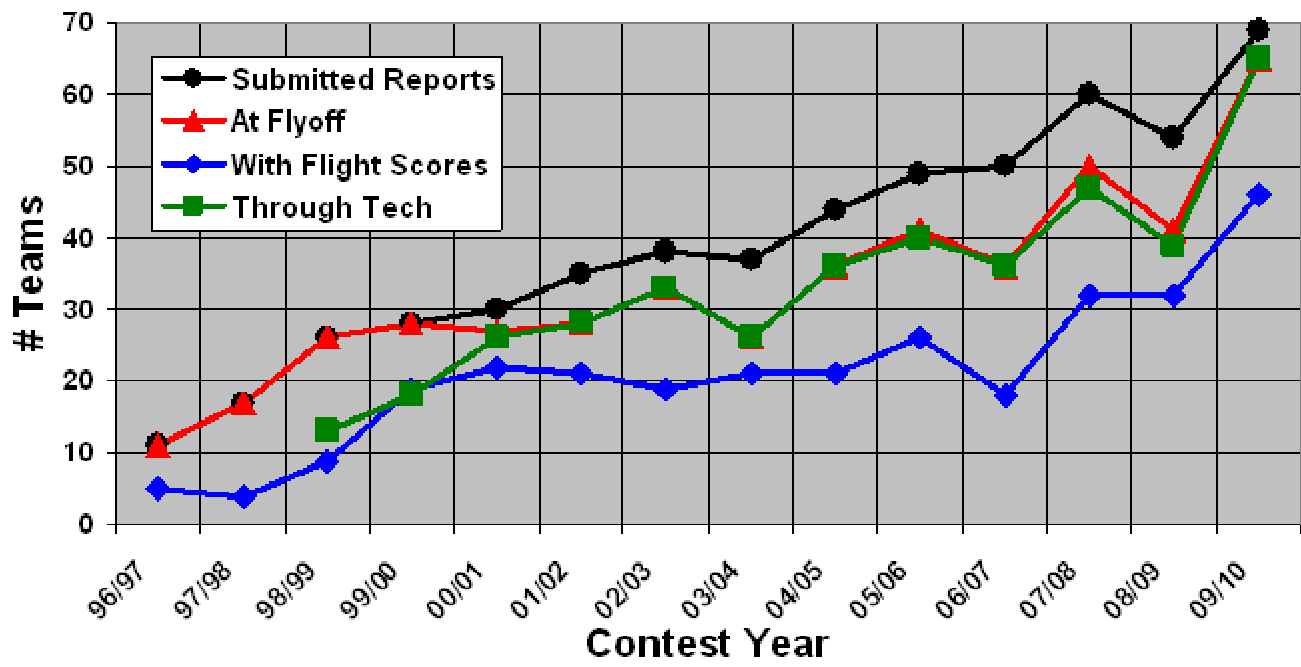
First Place was Oklahoma State University Team Orange, Second Place was Oklahoma State University Team Black and Third Place was Purdue University B'Euler Up. The top three teams had a very close competition. Oklahoma State University (OSU) Orange was ahead after all three teams completed the third mission. They then re-flew Mission 2 and dropped their ball loading time from 16 seconds down to 12 seconds to stretch their lead. Purdue and OSU Black then retried their mission 2 but unfortunately both had problems. A full listing of the results is included below

We owe our thanks for the success of the DBF competition to the efforts of many volunteers from Cessna Aircraft, Raytheon Missile Systems, and the AIAA sponsoring technical committees: Applied Aerodynamics, Aircraft Design, Flight Test, and Design Engineering. These volunteers collectively set the rules for the contest, publicize the event, gather entries, judge the written reports, and organize the flyoff. Thanks also go to the Corporate Sponsors: Raytheon Missile Systems and Cessna Aircraft Company, and also to the AIAA Foundation for their financial support. Special thanks go to Cessna Aircraft for hosting the flyoff this year.

Finally, this event would not be nearly as successful without the hard work and enthusiasm from all the students and advisors. If it weren't for you, we wouldn't keep doing it.

David Levy and Tom Zickuhr  
For the DBF Governing Committee

AIAA Design/Build/Fly Contest Statistics



## AIAA 2009/2010 Design/Build/Fly Contest Preliminary Results

Place	University	Entry Name	Report Score	W_Team Maximum Weight	Mission 1 Score	Mission 2 Score	Mission 3 Score	Total Flight Score	Final Score
1	Oklahoma State University	OSU Orange	96.00	7.7	34.0	94.8	88.1	216.9	20818
2	Oklahoma State University	OSU Black	93.50	7.8	30.6	74.9	92.2	197.6	18480
3	Purdue University	B'Euler Up	94.25	7.5	34.9	58.4	97.5	190.8	17984
4	University of Texas at Austin	Bat Wing	92.25	10.2	22.1	57.3	68.6	148.0	13649
5	California Polytechnic State University SLO	Swings Both Ways	88.00	10.2	19.4	61.3	73.3	154.0	13555
6	Middle East Technical University	ANATOLIAN CRAFT	87.73	12.2	16.8	47.9	74.2	138.9	12187
7	University of Colorado at Boulder	Buff Bambino	93.00	11.0	15.7	28.4	73.8	117.9	10963
8	West Virginia University	WVU Blue	95.00	10.8	14.4	36.9	60.1	111.4	10587
9	Rensselaer Polytechnic Institute	Rensselaer Redhawks	78.50	18.7	13.1	17.3	100.0	130.5	10244
10	Sapienza Università di Roma	Falkor	86.00	23.8	7.1	24.6	81.4	113.0	9722
11	University of Texas at Austin	Texas Flight	78.63	11.0	16.4	46.8	48.5	111.7	8785
12	Turkish Air Force Academy	Anatolian Eagle	74.00	12.4	14.7	41.6	62.1	118.4	8759
13	Pennsylvania State University	TurboKat	85.84	11.5	17.4	31.7	45.4	94.5	8115
14	Wichita State University	WSU Team Wheat	73.25	7.3	32.2	66.7	0.0	98.9	7243
15	West Virginia University	WVU Gold	86.77	14.1	12.9	20.7	41.6	75.2	6527
16	Virginia Polytechnic Institute and State University	Veni, Vidi, Vici	83.50	11.6	21.9	53.9	0.0	75.8	6329
17	Istanbul Technical University	ATLANTIS	88.50	11.2	18.3	48.9	0.0	67.2	5949
18	Wichita State University	WSU Team Shock	93.25	9.3	25.7	37.7	0.0	63.3	5906
19	University of California, Irvine	Bat-Eater	73.00	10.8	14.7	57.9	0.0	72.7	5305
20	University of California San Diego	TLAR Velox	67.38	10.5	22.1	55.6	0.0	77.7	5235
21	Turkish Air Force Academy	Cevheri- 3	88.00	12.3	15.5	41.9	0.0	57.4	5052
22	University of Arizona	Ground Out	72.00	31.7	5.7	4.7	59.7	70.1	5048
23	San Diego State University	Monty's LN - 7	92.00	17.6	16.8	33.2	0.0	49.9	4595
24	Auburn University	The Planesman	85.50	9.7	17.8	32.3	0.0	50.0	4279
25	Massachusetts Institute of Technology	The Perfect Pitch	92.00	9.0	18.0	27.0	0.0	45.1	4146
26	Georgia Institute of Technology	Perfect Option	89.00	5.9	39.3	0.0	0.0	39.3	3496
27	University of Florida	AviGator	92.50	10.1	13.8	20.7	0.0	34.5	3191
28	Anadolu University	Turkuaz	83.50	19.8	8.6	29.5	0.0	38.1	3183
29	Universidad Pontificia Bolivariana (UPB)	UPB Colombia	83.00	18.8	9.7	25.9	0.0	35.6	2953
30	University of California Los Angeles	The Bad News Bears	82.34	17.0	9.4	14.3	0.0	23.7	1949
31	University of Miami	Sign Finder	74.83	14.9	8.6	14.7	0.0	23.3	1746

32	University of Oklahoma	Crimson Skies	84.00	11.7	20.7	0.0	0.0	20.7	1739
33	California State Polytechnic University, Pomona	Phoenix	69.50	22.9	7.5	13.2	0.0	20.6	1435
34	University of Tennessee, Knoxville	Team Volocity	77.63	16.4	12.5	0.0	0.0	12.5	972
35	University of Ljubljana, Faculty of Mechanical Engineering	Edvard Rusjan Slovenian Team	84.75	19.5	10.4	0.0	0.0	10.4	881
36	University of Kentucky -Lexington Campus	Gato De Cielo	76.75	16.4	11.2	0.0	0.0	11.2	863
37	Iowa State University	Iowa State Red Team	76.00	19.5	9.8	0.0	0.0	9.8	744
38	Istanbul Technical University	ATA-11	83.15	17.6	8.9	0.0	0.0	8.9	737
39	City College of New York	□ φροδίτη (Aphrodite)	69.00	19.6	8.0	0.0	0.0	8.0	549
40	California Polytechnic University Pomona	The Bronco Ballers	70.65	20.2	7.6	0.0	0.0	7.6	535
41	Clarkson University	KnightHawks	65.50	18.9	7.5	0.0	0.0	7.5	489
42	University of Alabama, Tuscaloosa	Alabama Slammer	88.40	25.3	5.5	0.0	0.0	5.5	489
43	Intituto Politecnico Nacional	Aviación Quetzal	39.00	16.8	10.9	0.0	0.0	10.9	423
44	Western Michigan University	H.T.A.	56.00	18.5	7.0	0.0	0.0	7.0	393
45	Rochester Institute of Technology	RIT Aero	73.75	30.6	5.0	0.0	0.0	5.0	365
46	University of Nebraska - Lincoln	Red Horizon	44.00	33.0	4.4	0.0	0.0	4.4	193
47	Georgia Institute of Technology	Down to Buzzness	81.00	7.8	0.0	0.0	0.0	0.0	3
48	Case Western Reserve University	All Balls	74.85	9.8	0.0	0.0	0.0	0.0	2
49	University of Southern California	Dark Reign of Troy	89.25	11.8	0.0	0.0	0.0	0.0	2
50	University of Illinois Urbana-Champaign	Illini SkyBound	67.00	10.5	0.0	0.0	0.0	0.0	2
51	University of Washington	Da Dawgsled	64.50	11.7	0.0	0.0	0.0	0.0	1
52	Rose-Hulman Institute of Technology	DarkKnightII	77.75	16.2	0.0	0.0	0.0	0.0	1
53	University of Arkansas	Swine Flew	85.00	20.5	0.0	0.0	0.0	0.0	1
54	Columbia University	Lion Cub	72.00	22.5	0.0	0.0	0.0	0.0	1
55	University of Strathclyde	Icarus	85.00	30.4	0.0	0.0	0.0	0.0	1
56	University of Central Florida	Knight Wing	80.00	29.2	0.0	0.0	0.0	0.0	1
57	TOBB University of Economics and Technology, Ankara	Lagari	62.50	27.6	0.0	0.0	0.0	0.0	1
58	University of Dayton	UD Flyers	78.00	41.8	0.0	0.0	0.0	0.0	1
59	University at Buffalo, The State University of New York	Chicken Wings	61.00	33.9	0.0	0.0	0.0	0.0	0
60	New Mexico State University	Bluebird	56.75	41.7	0.0	0.0	0.0	0.0	0
61	University of Miami	The U Bird	44.00	37.9	0.0	0.0	0.0	0.0	0
62	Arizona State University	Brimstone	60.00	72.0	0.0	0.0	0.0	0.0	0
63	Daniel Webster College, University of Massachusetts Lowell	Redemption	80.00	149.0	0.0	0.0	0.0	0.0	0
64	San Jose State University	Spartans	63.50	149.0	0.0	0.0	0.0	0.0	0
65	Washington State University	Palouse Goose	53.00	149.0	0.0	0.0	0.0	0.0	0
66	American University of Sharjah	Desert Eagle	82.00	0.0	0.0	0.0	0.0	0.0	0
67	Syracuse University	Flying Orange	71.00	0.0	0.0	0.0	0.0	0.0	0
68	Iowa State University	ISU Gold Team	59.00	0.0	0.0	0.0	0.0	0.0	0
69	California State University Long Beach	Project Batboy	37.50	0.0	0.0	0.0	0.0	0.0	0



**First Place: Oklahoma State University Team Orange**



**Second Place Oklahoma State University Team Black**



**Third Place Purdue University B'Euler Up**