



Cessna Aircraft Company Raytheon Missile Systems AIAA Foundation

The 2014 Cessna Aircraft Company/Raytheon Missile Systems/AIAA Design/Build/Fly Competition Flyoff was held at Cessna East Field in Wichita, KS on the weekend of April 11-13, 2014. This was the 18th year the competition was held. Of the 100 entries this year, a total of 80 teams submitted written reports to be judged. And 71 teams attended the flyoff (19 international). All the teams that attended completed the technical inspection. Approximately 700 students, faculty, and guests were present.

The theme for this year was a “Back Country Rough Field Bush Plane”:

- Taxi Mission simulated rough field operations using corrugated roofing panels
- Flight mission 1 was a ferry flight scored on the number of laps which could be flown in 4 minutes
- Flight mission 2 was a maximum load mission with team-chosen number of cargo blocks for three laps
- Flight mission 3 was an emergency medical mission carrying two simulated patients and attendants on a timed three-lap flight.

The Mission Score was the sum of the three Flight Scores, and factored by the Taxi Score (1 if completed, 0.2 if not). As usual, the Final Score is the product of the Mission Score and written Report Score, divided by airplane RAC (empty weight). More details can be found at the competition website: <http://www.aiaadbf.org>

Despite strong winds for most of the weekend and a 1-hour suspension on Sunday for a passing thunderstorm, the flyoff set new records. There were 209 flight attempts, of which 105 resulted in a valid flight score. 49 teams had successful flight scores and 61 completed the taxi mission. 20 teams completed all three flight missions. The quality of the teams, readiness to compete, and execution of the flights was outstanding.

First place went to University of Southern California with a score of 407.24, second place to University of California Irvine at 352.86 and third to San Jose State University at 326.37. A full listing of the results is shown below. The best paper award, sponsored by the Design Engineering TC for the highest report score, went to Cal Poly San Luis Obispo with a score of 98.70.

We owe our thanks for the success of the DBF competition to the efforts of many volunteers from Cessna Aircraft, the 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: Cessna Aircraft, Raytheon Missile Systems, and the AIAA Foundation for their financial support. Special thanks 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
For the DBF Governing Committee

2014 AIAA Design/Build/Fly Competition Final Results

Place	University	Report Score	Taxi	M1	M2	M3	Mission Score	RAC	Final Score
1	University of Southern California	87.75	1.0	2.00	3.00	3.72	8.72	1.88	407.24
2	University of California Irvine	94.50	1.0	2.00	3.00	5.68	10.68	2.86	352.86
3	San Jose State University	86.50	1.0	1.43	2.00	4.27	7.70	2.04	326.37
4	University Of Ljubljana	89.50	1.0	1.14	2.00	3.40	6.54	2.28	256.76
5	MIT	89.33	1.0	2.00	3.00	6.00	11.00	4.66	210.87
6	Pennsylvania State University	87.00	1.0	2.00	3.00	5.49	10.49	4.54	200.92
7	Khalifa University	98.00	1.0	1.43	3.00	4.59	9.02	5.03	175.71
8	San Diego State University	93.93	1.0	2.00	3.00	5.27	10.27	6.06	159.17
9	Cal Poly SLO	98.70	1.0	1.14	2.00	0.00	3.14	1.98	156.72
10	Western Michigan University	87.50	1.0	1.71	2.00	4.34	8.05	4.62	152.47
11	Wichita State University	92.00	1.0	1.14	2.00	0.00	3.14	2.04	141.78
12	Chulalongkorn University	87.17	1.0	1.43	3.00	5.64	10.07	6.60	133.04
13	Rose Hulman	82.00	1.0	1.43	2.00	3.09	6.52	4.22	126.75
14	Turkish Air Force Academy	89.25	1.0	1.43	3.00	2.59	7.02	5.14	121.89
15	Tel Aviv University	91.50	1.0	1.14	3.00	4.43	8.58	6.48	121.08
16	Anadolu University	88.50	1.0	0.86	2.00	2.50	5.36	3.96	119.68
17	Arizona State University	85.50	1.0	1.14	4.00	3.84	8.98	6.62	115.99
18	La Sapienza	91.95	1.0	0.86	2.00	0.00	2.86	2.48	105.97
19	Clarkson University	75.00	1.0	1.14	2.00	3.61	6.76	4.84	104.71
20	Columbia University	81.50	1.0	0.57	2.00	3.20	5.77	5.00	94.12
21	UCLA	90.00	1.0	0.86	2.00	2.39	5.25	5.28	89.50
22	Virginia Tech	86.00	1.0	1.14	0.00	0.00	1.14	1.48	66.47
23	SUNY At Buffalo	90.00	1.0	1.14	2.00	0.00	3.14	4.90	57.74
24	Georgia Tech	84.50	1.0	1.14	0.00	0.00	1.14	1.73	56.03
25	The University of Alabama	78.00	1.0	0.86	2.00	2.91	5.77	8.26	54.49
26	KAIST	75.13	1.0	0.57	3.00	0.00	3.57	5.24	51.22
27	University of Oklahoma	83.50	1.0	0.86	2.00	0.00	2.86	4.98	47.92
28	Istanbul Technical University	82.00	1.0	1.43	2.00	0.00	3.43	6.12	45.95
29	University of Miami	43.62	1.0	0.86	2.00	3.27	6.13	10.28	26.01
30	University of Washington	65.75	1.0	0.86	2.00	0.00	2.86	7.40	25.39
31	Cornell	92.00	1.0	0.86	0.00	0.00	0.86	3.14	25.14
32	Rensselaer Polytechnic Institute	94.00	1.0	1.14	0.00	0.00	1.14	4.50	23.89
33	University of Illinois at Urbana-Champaign	83.75	1.0	0.86	0.00	0.00	0.86	3.12	23.04
34	Hong Kong University of Science and Technology	81.50	1.0	1.14	0.00	0.00	1.14	4.10	22.74
35	University Of Colorado Boulder	75.75	1.0	0.57	0.00	0.00	0.57	2.78	15.60
36	Oregon State University	77.75	1.0	1.14	0.00	0.00	1.14	5.78	15.39
37	Politehnica Bucharest	79.00	1.0	1.14	0.00	0.00	1.14	6.00	15.06
38	The City College of New York	90.50	1.0	1.14	0.00	0.00	1.14	7.02	14.75
39	University Of Illinois At Chicago	92.50	1.0	0.86	0.00	0.00	0.86	6.00	13.23
40	Auburn	77.00	1.0	0.86	0.00	0.00	0.86	5.54	11.93

2014 AIAA Design/Build/Fly Competition Final Results (Cont'd)

Place	University	Report Score	Taxi	M1	M2	M3	Mission Score	RAC	Final Score
41	New Mexico Tech	76.33	1.0	0.29	1.00	0.00	1.29	10.12	9.71
42	Embry-Riddle Aeronautical University Prescott Campus	83.00	1.0	0.86	0.00	0.00	0.86	7.44	9.57
43	University Of Notre Dame	85.75	1.0	0.57	0.00	0.00	0.57	5.36	9.16
44	University of Kentucky	79.50	1.0	0.29	0.00	0.00	0.29	2.58	8.83
45	West Virginia University	90.50	1.0	0.29	0.00	0.00	0.29	6.02	4.31
46	U. of Tennessee Knoxville	69.00	1.0	0.57	0.00	0.00	0.57	10.60	3.73
47	Johns Hopkins	80.00	0.2	0.57	0.00	0.00	0.11	3.38	2.71
48	Veerмата Jijabai Tech Institute	85.50	1.0	0.29	0.00	0.00	0.29	9.42	2.60
49	New Mexico State University	74.00	1.0	0.29	0.00	0.00	0.29	8.62	2.46
50	UCSD	89.38	1.0	0.00	0.00	0.00	0.00	N/A	Flight Attempt
51	Nanyang Tech University	88.00	1.0	0.00	0.00	0.00	0.00	N/A	
52	University of Arkansas	87.00	1.0	0.00	0.00	0.00	0.00	N/A	
53	Yildiz Technical University	87.00	1.0	0.00	0.00	0.00	0.00	N/A	
54	University Of Central Florida	84.88	1.0	0.00	0.00	0.00	0.00	N/A	
55	University Of California Berkeley	80.00	1.0	0.00	0.00	0.00	0.00	N/A	
56	Ghulam Ishaq Khan Institute	78.50	1.0	0.00	0.00	0.00	0.00	N/A	
57	Syracuse University	78.00	1.0	0.00	0.00	0.00	0.00	N/A	
58	University Of South Alabama	77.28	1.0	0.00	0.00	0.00	0.00	N/A	
59	University of Nebraska-Lincoln	73.50	1.0	0.00	0.00	0.00	0.00	N/A	
60	IOWA STATE UNIVERSITY	60.10	1.0	0.00	0.00	0.00	0.00	N/A	
61	CSU Long Beach	38.00	1.0	0.00	0.00	0.00	0.00	N/A	
62	CSU Sacramento	33.00	1.0	0.00	0.00	0.00	0.00	N/A	
63	University of Erciyes	93.00	0.2	0.00	0.00	0.00	0.00	N/A	
64	U. of Massachusetts Lowell	83.00	0.2	0.00	0.00	0.00	0.00	N/A	
65	ULUDAG UNIVERSITY	79.00	0.2	0.00	0.00	0.00	0.00	N/A	
66	Kalinga Institute	79.00	0.2	0.00	0.00	0.00	0.00	N/A	
67	Military Inst. of Science & Tech.	73.63	0.2	0.00	0.00	0.00	0.00	N/A	
68	Embry-Riddle Aeronautical University Daytona Beach	68.00	0.2	0.00	0.00	0.00	0.00	N/A	
69	North Dakota State University	63.00	0.2	0.00	0.00	0.00	0.00	N/A	
70	Bursa Technical University	58.50	0.2	0.00	0.00	0.00	0.00	N/A	
71	The Ohio State University	55.00	0.2	0.00	0.00	0.00	0.00	N/A	
72	Concordia University	90.00	0.2	0.00	0.00	0.00	0.00	N/A	
73	Rice University	66.00	0.2	0.00	0.00	0.00	0.00	N/A	
74	The University of Iowa	58.50	0.2	0.00	0.00	0.00	0.00	N/A	
75	Colorado State University	57.50	0.2	0.00	0.00	0.00	0.00	N/A	
76	Univ Of Colorado Co Springs	52.00	0.2	0.00	0.00	0.00	0.00	N/A	
77	Manhattan College	43.00	0.2	0.00	0.00	0.00	0.00	N/A	
78	Qatar University	41.50	0.2	0.00	0.00	0.00	0.00	N/A	
79	Tuskegee University	6.00	0.2	0.00	0.00	0.00	0.00	N/A	
80	Old Dominion University	0.50	0.2	0.00	0.00	0.00	0.00	N/A	



First Place Winner: University of Southern California.



Second Place Winner: University of California at Irvine.



Third Place Winner: San Jose State University.