



Cessna Aircraft Company Raytheon Missile Systems AIAA Foundation

The 2015 AIAA/Cessna Aircraft Company/Raytheon Missile Systems Design/Build/Fly Competition Flyoff was held at TIMPA Field in Tucson, AZ on the weekend of April 10-12, 2015. This was the 19th year the competition was held. Of the 100 entries this year, 84 teams submitted written reports to be judged and were eligible to participate in the flyoff. Sixty-five (65) teams attended the flyoff, all of which completed the technical inspection. Over 650 students, faculty, and guests were present. The weather was excellent allowing for non-stop flying. Of the 262 official flight attempts, 121 resulted in a successful score with 56 teams achieving a flight score (a new record!). Twenty-three (23) teams successfully completed all three missions. The quality of the teams, their readiness to compete, and the execution of the flights continues to improve each year.

The contest theme this year was a Remote Sensor Delivery and Drop System. The first mission was a Ferry Flight with no payload to see how many laps each team could fly in 4 minutes. The second mission was a Sensor Package Transport Mission with a 5 lb internal payload with the time to fly three laps as the score. The third mission was a Sensor Drop Mission in which the externally carried payload (12" whiffle balls) were dropped on each lap with the score being the number of laps with a successful drop. A ground mission was also required consisting of a timed loading of the payloads for mission 2 and 3. 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.aiaadbf.org>.

First Place went to the University of Ljubljana, the first time an international team has won DBF, Second Place went to University of California Irvine and Third Place went to Georgia Institute of Technology. A full listing of the results is included below. The Best Paper Award, sponsored by the Design Engineering TC for the highest report score, went to Georgia Institute of Technology with a score of 98.50.

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 Raytheon Missile Systems 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.

Russ Althof
For the DBF Governing Committee

2015 Design/Build/Fly Competition Final Results

Place	University	Report Score	Mission Scores					RAC	Final Score
			Ground	1	2	3	Total		
1	University of Ljubljana	83.50	1.00	1.71	2.26	1.09	5.06	9.90	42.71
2	University of California Irvine	92.75	0.60	2.00	3.96	1.09	4.23	9.60	40.89
3	Georgia Institute of Technology	98.50	0.35	2.00	3.01	3.82	3.11	9.30	32.99
4	Tel Aviv University	90.50	0.67	1.71	4.00	1.09	4.54	15.30	26.84
5	University of Texas Austin	91.00	0.60	1.43	2.49	1.64	3.33	12.60	24.08
6	Istanbul Technical University	88.00	0.60	1.43	2.93	0.55	2.94	11.40	22.70
7	Pennsylvania State University	89.50	0.55	1.71	2.71	1.64	3.30	14.40	20.54
8	Beihang University	80.50	0.43	1.43	2.60	4.36	3.59	14.40	20.09
9	Massachusetts Institute of Technology	95.00	0.30	1.14	2.27	2.73	1.84	9.60	18.23
10	San Jose State University	94.00	0.25	1.43	2.79	2.18	1.60	8.70	17.30
11	Oregon State University	90.00	0.38	1.43	2.45	0.00	1.45	11.40	11.48
12	Anadolu University	85.25	0.29	1.43	3.63	2.18	2.07	15.60	11.31
13	Middle East Technical University	77.00	0.50	0.86	2.52	0.00	1.69	12.00	10.84
14	University of California San Diego	83.50	0.55	1.43	2.81	0.00	2.31	19.50	9.91
15	Wichita State University	88.50	0.55	1.43	0.00	0.00	0.78	7.20	9.58
16	California Polytechnic State University San	94.00	0.19	1.71	3.33	0.55	1.08	11.10	9.16
17	University of Southern California	96.00	0.35	1.14	1.62	0.00	0.98	10.40	9.00
18	Khalifa University	95.00	0.50	1.43	0.00	0.00	0.71	8.40	8.08
19	University of Glasgow	92.50	0.46	0.86	2.21	0.00	1.42	19.00	6.90
20	Yildiz Technical University	86.00	0.46	1.14	2.74	0.55	2.04	27.00	6.51
21	San Diego State University	95.00	0.46	1.71	0.00	0.00	0.79	12.00	6.27
22	University of Washington	92.50	0.10	1.71	1.74	2.18	0.55	10.20	4.95
23	Arizona State University	79.00	0.26	1.71	3.23	1.09	1.57	29.60	4.20
24	University of Massachusetts Lowell	91.75	0.21	1.71	2.56	0.55	1.00	27.00	3.39
25	Western Michigan University	91.00	0.33	1.43	0.00	0.00	0.48	13.20	3.28
26	FH Joanneum University of Applied Science	90.50	0.15	1.71	3.35	6.00	1.62	46.00	3.19
27	University of Strathclyde	89.00	0.33	1.14	2.28	1.64	1.69	47.40	3.17
28	Uludag University	78.50	0.18	0.86	1.58	1.09	0.64	21.60	2.33
29	Rice University	89.50	0.11	1.43	2.93	2.18	0.74	32.50	2.04
30	ERAU Prescott	84.00	0.14	1.14	2.42	1.64	0.71	32.60	1.83
31	Università di Roma "La Sapienza"	93.00	0.17	1.43	0.00	0.00	0.24	14.40	1.54
32	University of Notre Dame	76.00	0.55	1.14	0.00	0.00	0.62	32.00	1.48
33	West Virginia University	80.50	0.32	1.14	0.00	0.00	0.36	21.60	1.35
34	University of Colorado Boulder	91.50	0.26	0.57	0.00	0.00	0.15	10.20	1.34
35	Hong Kong University Science and Technol	77.50	0.24	0.86	0.00	0.00	0.21	15.20	1.05
36	Virginia Tech	91.00	0.11	0.86	0.00	0.00	0.09	9.90	0.83
37	Columbia University in the City of New York	72.50	0.35	1.14	0.00	0.00	0.40	36.60	0.80
38	Ohio State University	91.00	0.19	1.43	0.00	0.00	0.28	37.50	0.67
39	California State University, Long Beach	87.00	0.12	1.14	0.00	0.00	0.14	19.60	0.62
40	Rashtrreeya Vidyalaya College of Engineerin	85.50	0.40	0.57	0.00	0.00	0.23	31.80	0.62
41	Karabuk University	85.50	0.07	0.29	2.21	1.64	0.27	38.50	0.60
42	University of Illinois at Urbana-Champaign	94.00	0.13	1.14	0.00	0.00	0.15	24.00	0.57

2013 Design/Build Fly Competition Final Results (cont)

Place	University	Report Score	Mission Scores					RAC	Final Score
			Ground	1	2	3	Total		
43	Chulalongkorn University	85.00	0.15	1.14	0.00	0.00	0.17	27.50	0.53
44	University of Florida	89.50	0.14	1.14	0.00	0.00	0.16	28.40	0.51
45	Clarkson University	85.25	0.03	0.86	2.10	1.09	0.13	29.50	0.37
46	Saint Louis University	93.00	0.06	0.86	2.66	0.00	0.22	58.20	0.36
47	National University of Singapore	80.00	0.07	1.14	0.00	0.00	0.08	33.00	0.18
48	University of California Berkeley	64.00	0.14	0.57	0.00	0.00	0.08	33.00	0.15
49	Cornell University	92.00	0.06	1.14	0.00	0.00	0.07	40.80	0.15
50	Iowa State University	81.25	0.15	0.29	0.00	0.00	0.04	25.60	0.13
51	New Mexico State University	51.00	0.17	0.86	0.00	0.00	0.15	66.00	0.11
52	University of Nebraska Lincoln	66.50	0.06	0.86	0.00	0.00	0.05	45.60	0.08
53	Worcester Polytechnic Institute	66.25	0.06	0.57	0.00	0.00	0.03	38.00	0.06
54	Sakarya University	39.00	0.10	1.14	0.00	0.00	0.11	80.00	0.05
55	Indiana State University	42.25	0.11	0.29	0.00	0.00	0.03	54.95	0.02
56	North Dakota State University	71.50	0.04	0.29	0.00	0.00	0.01	41.40	0.02
57	CUNY The City College of New York	92.00	0.13	0.00	0.00	0.00	0.00	0.00	Completed Ground Mission
58	University of Arkansas	87.00	0.17	0.00	0.00	0.00	0.00	0.00	
59	Universidad de San Buenaventura Bogota	80.00	0.11	0.00	0.00	0.00	0.00	0.00	
60	University of Kentucky Paducah	74.50	0.67	0.00	0.00	0.00	0.00	0.00	
61	Cairo University	66.50	0.03	0.00	0.00	0.00	0.00	0.00	
62	Tanta University	58.00	0.13	0.00	0.00	0.00	0.00	0.00	
63	University of California Merced	37.38	0.05	0.00	0.00	0.00	0.00	0.00	
64	Ghulam Ishaq Khan	81.00	0.00	0.00	0.00	0.00	0.00	0.00	*
65	Rensselaer Polytechnic Institute	62.50	0.00	0.00	0.00	0.00	0.00	0.00	
66	SRM University	87.00	0.00	0.00	0.00	0.00	0.00	0.00	Submitted Report
67	Erciyes University	83.50	0.00	0.00	0.00	0.00	0.00	0.00	
68	University of Alabama	78.50	0.00	0.00	0.00	0.00	0.00	0.00	
69	University of Central Florida	77.00	0.00	0.00	0.00	0.00	0.00	0.00	
70	Hong Kong Polytechnic University	73.00	0.00	0.00	0.00	0.00	0.00	0.00	
71	Auburn University	71.00	0.00	0.00	0.00	0.00	0.00	0.00	
72	Michigan State University	70.50	0.00	0.00	0.00	0.00	0.00	0.00	
73	Eskisehir Osmangazi University	69.00	0.00	0.00	0.00	0.00	0.00	0.00	
74	Rose-Hulman Institute of Technology	69.00	0.00	0.00	0.00	0.00	0.00	0.00	
75	Syracuse University	67.75	0.00	0.00	0.00	0.00	0.00	0.00	
76	Wentworth Institute of Technology	61.75	0.00	0.00	0.00	0.00	0.00	0.00	
77	Lehigh University	60.50	0.00	0.00	0.00	0.00	0.00	0.00	
78	Case Western Reserve University	59.00	0.00	0.00	0.00	0.00	0.00	0.00	
79	Purdue University	53.00	0.00	0.00	0.00	0.00	0.00	0.00	
80	Eastern Washington University	50.50	0.00	0.00	0.00	0.00	0.00	0.00	
81	ERAU Daytona Beach	50.00	0.00	0.00	0.00	0.00	0.00	0.00	
82	University of Colorado Colorado Springs	34.00	0.00	0.00	0.00	0.00	0.00	0.00	
83	Southern Poly State University	27.50	0.00	0.00	0.00	0.00	0.00	0.00	
84	Manhattan College	23.00	0.00	0.00	0.00	0.00	0.00	0.00	

*Passed Tech Inspection

First Place – University of Ljubljana



Second Place – University of California Irvine



Third Place – Georgia Tech



Past Winners

Year	Team
2015	University of Ljubljana
2014	University of Southern California
2013	University of California Irvine
2012	San Jose State University
2011	Georgia Tech University
2010	Oklahoma State University Team Orange
2009	Oklahoma State University Team Black
2008	Oklahoma State University Team Black
2007	Massachusetts Institute of Technology
2006	Oklahoma State University Team Black
2005	Oklahoma State University Team Black
2004	Oklahoma State University Team Black
2003	San Diego State University
2002	University of California San Diego
2001	Oklahoma State University Team Orange
2000	Utah State University
1999	Utah State University
1998	University of Southern California
1997	University of Illinois at Urbana-Champaign