



Textron Aviation
Raytheon Missile Systems
AIAA Foundation

The 2019-20 AIAA/Textron Aviation/Raytheon Missile Systems Design/Build/Fly Competition was unexpectedly cut short this year due to the COVID-19 pandemic. This was the 24th year for the competition and in spite of the worldwide problems caused by the spread of the virus, the competition received 143 proposals, of which 113 were selected for the competition. Of the 113 teams selected, 101 submitted a formal report. Due to the correct decision to cancel the fly-off, the DBF Organizing Committee along with AIAA and in coordination with the Premier Sponsors Textron Aviation and Raytheon Missile Systems, decided to score the competition based solely on the final report scores. The reports were scored identically as in previous competitions. The results:

First Place (\$3,000 and \$100 for Best Report Score): **University of Southern California**

Second Place (\$2,000): **Georgia Institute of Technology**

Third Place (\$1,500): **University of Nevada, Las Vegas**

In addition to the Best Report Score, the Design Engineering Technical Committee also awards a copy of the AIAA *Aerospace Design Engineers Guide* to the top ten teams. The top ten teams are:

Place	Team	Award(s)
1	University of Southern California	\$3,000 (1 st place), \$100 (Best Paper Award), Design Guide
2	Georgia Institute of Technology	\$2,000 (2 nd place), Design Guide
3	University Nevada Las Vegas	\$1,500 (3 rd place), Design Guide
4	The Pennsylvania State University	Design Guide
5	The City College of New York (CCNY)	Design Guide
6	Massachusetts Institute of Technology	Design Guide
7	Missouri University of Science and Technology	Design Guide
8	The University of Alabama	Design Guide
9	Khalifa University	Design Guide
10	FH JOANNEUM University of Applied Sciences	Design Guide

The contest theme this year was a Banner Towing Bush Plane. Each aircraft was required to have a 5 foot maximum wing span. The first mission was a Test Flight with no payload for three laps within five minutes. The second mission was Charter Mission with passengers and luggage. The mission 2 score was based on the number of passengers (and luggage) flown divided by the time to fly three laps. The final mission was a Banner Flight where teams were to deploy a banner after take-off and release the banner after crossing the finish line during the last lap but before landing. The mission score was based on the size of the banner and number of laps flown in the 10 minute mission window. Teams were also required to complete a timed ground mission demonstrating Mission 2 passenger and luggage loading and Mission 3 banner installation and deployment. More details on the mission requirements can be found at the competition website: <http://www.aiaadb.org>.

We owe our thanks for the success of the DBF competition to the efforts of many volunteers from Textron Aviation, 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 in all other years, organize the fly-off. Thanks also go to the Premier Sponsors: Textron Aviation and Raytheon Missile Systems, and also to the AIAA Foundation for their enthusiastic and financial support.

Finally, we understand the enormous disappointment of cancelling the fly-off this year. The DBF Organizing Committee expends a large amount of time and effort each year creating the rules and tailoring them to a design competition of this magnitude, scoring proposals and reports and planning and executing the fly-off event. Our reward for this commitment and effort is seeing how the teams implement the rules and create aircraft designs in the reports and at the fly-off with the actual aircraft and payloads. But we also know it is nothing compared to the time and commitment made by the student teams and that 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. AIAA has compiled footage of teams flying their planes at home. You can see what has been submitted so far [here](#). If you'd like to submit your team's footage, please upload it [here](#).

Russ Althof
For the DBF Organizing Committee

2020 Design/Build/Fly Competition Final Results

Place	Team	Score	Penalty	Comments
1	University of Southern California	93		
2	Georgia Institute of Technology	92		
3	University Nevada Las Vegas	91		
4	The Pennsylvania State University	90		
5	The City College of New York (CCNY) of the City University of New York	90		
6	Massachusetts Institute of Technology	90		
7	Missouri University of Science and Technology	89		
8	The University of Alabama	88		
9	Khalifa University	88		
10	FH JOANNEUM University of Applied Sciences	88		
11	University of Notre Dame	87		
12	University of Minnesota - Twin Cities	87		
13	Virginia Polytechnic Institute and State University	87		
14	University of Ljubljana	86		
15	The University of Texas at Dallas	86		
16	University of Maribor	86		
17	Johns Hopkins University	85		
18	University of Florida	85		
19	University of Oklahoma	85		
20	University of California, Irvine	85		
21	Cairo University	85		
22	University of Nebraska-Lincoln	84		
23	Embry-Riddle Aeronautical University Daytona Beach	84		
24	Illinois Institute of Technology	83		
25	University of Alaska Fairbanks	83		
26	California Polytechnic State University	83		
27	University of Maryland - College Park	83		
28	University of Michigan	82		
29	Rutgers, The State University of New Jersey	82		
30	RWTH Aachen University	82		
31	University of Central Florida	82		
32	Florida Institute of Technology	82		
33	Franklin W. Olin College of Engineering	81		
34	Ghulam Ishaq Khan Institute of Engineering Sciences and Technology	81		
35	University California, San Diego	81		
36	Embry-Riddle Aeronautical University - Prescott Campus	79		
37	EMIRATES AVIATION UNIVERSITY	79		
38	University of Kansas	79		
39	The Ohio State University	79		
40	The University of Texas at Austin	79		
41	University of Massachusetts Amherst	78		
42	Chulalongkorn University	78		
43	the University of Hong Kong	78		
44	The University of Akron	78		
45	University of Glasgow	78		
46	University of Washington - Seattle	78		
47	Trine University	78		
48	Utah State University	78		

2020 Design/Build Fly Competition Final Results (cont)

Place	Team	Score	Penalty	Comments
49	Hong Kong University of Science and Technology	77		
50	University of California, Los Angeles	77	-10	Report Score Name
51	Auburn University	77	-10	Report Score Name
52	Washington University in St. Louis	76		
53	San Diego State University	76		
54	Dayananda Sagar College of Engineering	76		
55	Universidad Pontificia Bolivariana (UPB)	76	-10	Report Size >20 MB
56	Rensselaer Polytechnic Institute	76		
57	University of Pennsylvania	75		
58	Case Western Reserve University	75		
59	Wichita State University	74	-10	Report Score Name
60	Arizona State University	74		
61	Stony Brook University	74		
62	University of Massachusetts, Lowell	73		
63	University of Petroleum and Energy Studies	73	-10	Report Score Name
64	San Jose State University	72		
65	University of Arkansas	72		
66	The Hong Kong Polytechnic University	72		
67	The University of Arizona	71		
68	PES UNIVERSITY	71		
69	University of Texas Rio Grande Valley	70		
70	New Mexico State University	70		
71	The George Washington University	70	-10	Report Score Name
72	SRM Institute of science and technology	69		
73	Stanford University	68		
74	University at Buffalo, The State University of New York	68		
75	University of Illinois at Urbana-Champaign	68		
76	North Carolina State University	68		
77	University of New South Wales	68		
78	University of Kentucky - Paducah	68		
79	University of Tennessee at Chattanooga	68		
80	Western Michigan University	67	-10	Report Score Name
81	Alfred University	66	-10	Report Score Name
82	Rowan University	65		
83	SUNY Polytechnic Institute	65		
84	Cornell University	64	-10	Report Score Name
85	University of Maryland, Baltimore County	64		
86	Rose-Hulman Institute of Technology	63		
87	Rashtreeya Vidyalaya College of Engineering	63		
88	Sahyadri College of Engineering and Management	61	-10	Report Score Name
89	Kent State University	60		
90	University of California Merced	60		
91	Clarkson University	59	-10	Report Score Name
92	Columbia University in the City of New York	58		
93	Yildiz Technical University	54		
94	Manhattan College	51	-10	Report Score Name
95	Higher Colleges Of Technology	48		
96	Lafayette College	46	-10	Report Score Name

2020 Design/Build Fly Competition Final Results (cont)

Place	Team	Score	Penalty	Comments
97	Rochester Institute of Technology	36	-10	Report Score Name
98	Washington State University Everett	30		
99	Miami University	26		
100	Texas Tech University	24		
101	Higher Colleges of Technology, Al Ain Women's College	17		

Past Winners

Year	Team
2020	University of Southern California
2019	University of Ljubljana
2018	Clarkson University
2017	University of Southern California
2016	San Jose State University
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

Team Locations

