

SEARCH AND RESCUE CHALLENGE

2019 UAS4STEM Nationals

August 17, 2019

Some Assembly Required

Total Points: **80.3**

Oral Briefing of a Flight Rediness Review (FRR)

Criteria	Weighting	Points (0 to 10)		Total
		Jdg 1	Jdg 2	
4.5.6.2.1	1	6	6	6
4.5.6.2.2	1	5	5	5
4.5.6.2.3	1	6	6	6
4.5.6.2.4	3	7	7	63
4.5.6.2.5	1	6	6	6
4.5.6.2.6	2	7	7	28
4.5.6.2.7	1	8	8	8
4.5.6.2.8	1	5	5	5

31.75

Flight Mission Demonstration

Stage	Minutes		Penalty
	Max	Actual	
4.6.4.1	15	15	0
4.6.4.2	30	40	-10
4.6.4.3	20	20	0

-10

Autonomous Flight Tasks

Segment	Max	Points	
Takeoff	4	0	
WP1	1	1	Command 1
WP2	1	1	Command 2
WP3	1	1	Command 3
WP4	1	1	Command 4
WP5	1	0	Command 5
WP6	1	0	Command 6
WP7	1	0	Command 7
WP8	1	0	Command 8
Landing	4	4	

8

3

11

Overall Safety Score **5**

Search

	Lat	Lon	Points	Classification
T1	40.17113	-85.318539	0	0
T2	40.1719725	-85.3177303	0	0
T3	40.17132	-85.31717	0	0
T4	40.17113	-85.318539	4	1
T5	40.1711418	-85.3181502	0	0
T6	40.17114	-85.3181	4	1
T7	40.1711741	-85.3181539	0	0
T8	40.1712974	-85.3172075	3	1

11

3

14

Balloon Drop

	Distance		Bonus
1	2.1	5	
2			
3	3.9	4	10

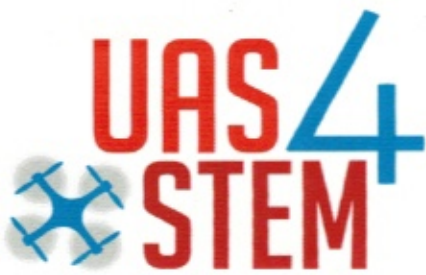
9

10

19

Ground School Score

95.6	9.56	9.56
Bonus Word	0	0



SEARCH AND RESCUE CHALLENGE

2019 Nationals _____

Date: 8/17/19

Judge: Andrea

Team Name: Some Assembly Required

Oral Briefing of a Flight Rediness Review (FRR)

Criteria	Weighting	Points (0 - 10)
4.4.6.2.1 Introductions	1	6
4.4.6.2.2 Overview	1	5
4.4.6.2.3 Safety	1	6
4.4.6.2.4 Test Results	3	7
4.4.6.2.5 Mission	1	6
4.4.6.2.6 Briefing	2	7
4.4.6.2.7 Participation	1	8
5 Questions (1 Point Each)		
4.4.6.2.8 Judges Questions	1	5

20 flight missions successful
 safety contingencies
 GPS accuracy

Comments:

25-28 min
 risk/reward framework - hybrid
 safety - 2FA - LOS, FAV, battery monitoring
 - checklists
 3D mounts on legs / landing gear

multiple design iterations
 issue resolution
 standing wave vibrations

VORANSE

1



2019 Nationals _____

Date: 08/17/2019

Judge: TERRI

Team Name: SAR

Oral Briefing of a Flight Rediness Review (FRR)

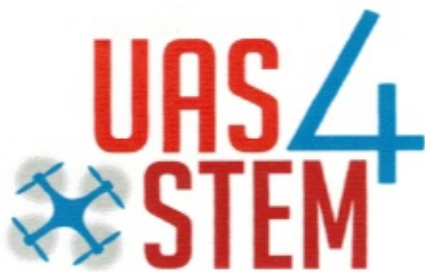
Criteria	Weighting	Points (0 - 10)
4.4.6.2.1 Introductions	1	6
4.4.6.2.2 Overview	1	5
4.4.6.2.3 Safety	1	6
4.4.6.2.4 Test Results	3	7
4.4.6.2.5 Mission	1	6
4.4.6.2.6 Briefing	2	7
4.4.6.2.7 Participation	1	8
5 Questions (1 Point Each)		
4.4.6.2.8 Judges Questions	1	5

What to do if GPS goes out?
 Do you RTH?
 Land immediately

- 1. F
- 2. Remote PIC
- 3. Failsafe
- 4. Autopilot
- 5. F.

Comments:

Nice drop mech.
 Lucas did a good job making eye contact.



SEARCH AND RESCUE CHALLENGE

2019 National _____

Date: 17 Aug 2019

Judge: David Mink

Team Name: SAR (Some Assembly Required)

Autonomous Flight Tasks

Segment	Max	Points
Takeoff	4	4
WP1/CMD	1	1
WP2/CMD	1	1
WP3/CMD	1	1
WP4/CMD	1	1
WP5/CMD	1	0
WP6/CMD	1	0
WP7/CMD	1	0
WP8/CMD	1	0
Landing	4	4

Max	Points
1	1
1	1
1	1
1	0
1	0
1	0
1	0
1	0
4	4

Balloon Drop

Distance
1
2
3

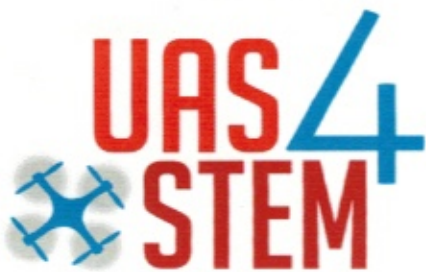
Safety
5

Flight Mission Demonstration

Stage	Max	Actual	Stage
Setup	15	15	4.6.4.1
Flight Time	30	32	4.6.4.2
Post Processing	20	19:29	4.6.4.3

Comments:

Well Defined Roles & Good Battery monitoring by safety rep / ground crew.
 Double-Checked Mission & A/C Setup
 Could Improve Equipment layout / Communications
 WP4: Aircraft did not circle around this point (POI)



SEARCH AND RESCUE CHALLENGE

2019 National _____

Date: _____

Judge: _____

Team Name: Some Assembly Required

Autonomous Flight Tasks

Segment	Max	Points	Max	Points
Takeoff	4		1	
WP1/CMD	1		1	
WP2/CMD	1		1	
WP3/CMD	1		1	
WP4/CMD	1		1	
WP5/CMD	1		1	
WP6/CMD	1		1	
WP7/CMD	1		1	
WP8/CMD	1		1	
Landing	4		1	

Balloon Drop

	Distance
1	<u>Bra</u> 2.1
2	
3	<u>3.9</u>

Flight Mission Demonstration

Stage	Minutes		Stage
	Max	Actual	
Setup	15		4.6.4.1
Flight Time	30		4.6.4.2
Post Processing	20		4.6.4.3

Comments: