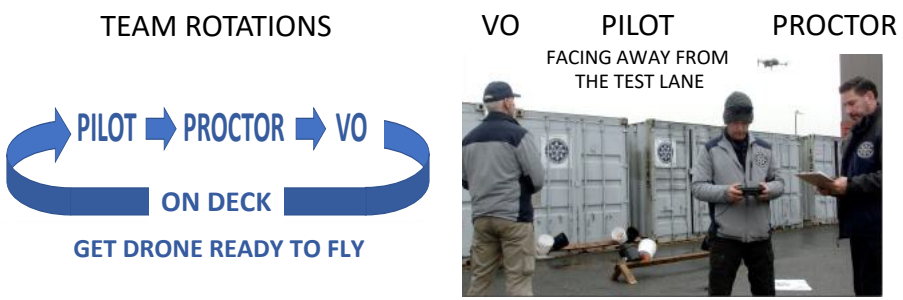
Teams Rotate Through Each Role

Each Pilot flies a 5-minute trial with help from others.
A 3-4 person team completes all 5 tests in 2 hours.



Four person teams always have one person getting their aircraft ready to launch right after the previous lands.

Three person teams work too, but require some time between each rotation to prepare the next aircraft.

PILOT

- Maintain control of the aircraft.
- Call out each intention of movement before doing so.
- Call out each bucket alignment and acuity target gap.

PROCTOR

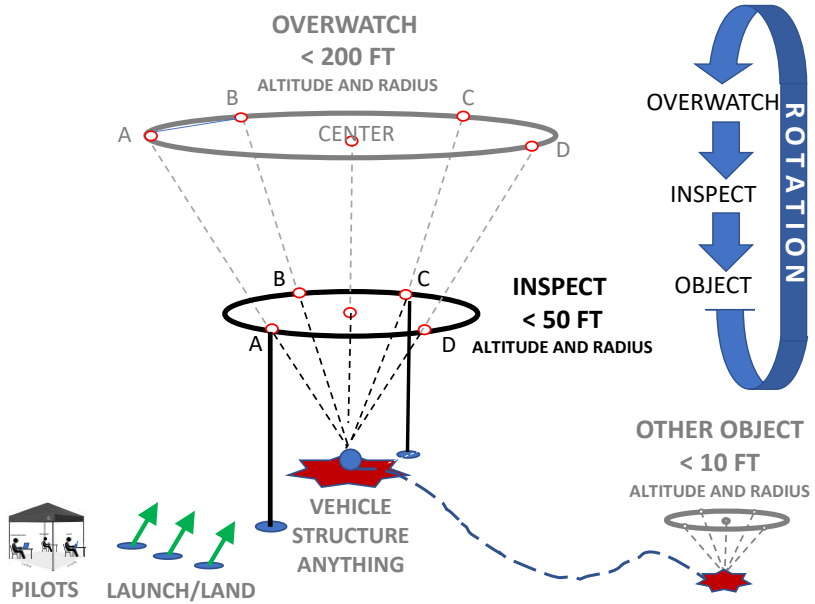
- Fill in the form header.
- Read the test procedures to the Pilot.
- Confirm, record, and attest to scoring after the trial.

VISUAL OBSERVER (VO)

- Maintain sight with the aircraft and surroundings.
- Repeat the Pilot's intention of movement to confirm.
- Call out corrections and warnings as necessary.

Teams Sequence Through Scenarios

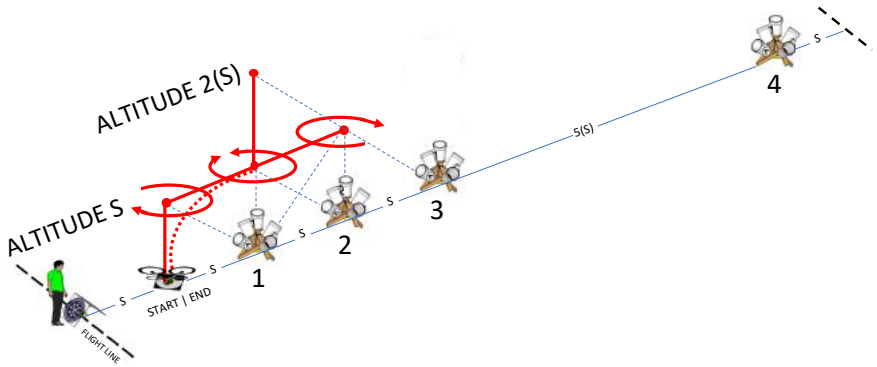
Each Pilot flies a 15-minute scenario, sequencing through 3 objectives for 5 minutes each.



- This scenario mechanization enables embedded bucket scoring tasks to be performed similarly by all participating Pilots. So the results are comparable within the same scenario layout. Additional tactics can be overlayed onto these scenarios at your facility.
- Up to 3 teams concurrently fly different scenario objectives from safe distances and altitudes apart.
- Teams move as necessary to maintain sight lines with their aircraft and communications with other teams. The overwatch team leads communications.
- Scenarios restart every 20 minutes with a different rotation of Pilot, Proctor, and VO.

Position (MAN/PAY 1)

Open Test Lane

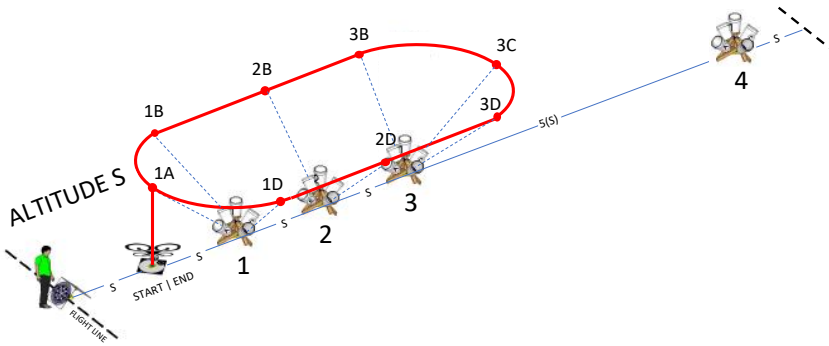


- Demonstrate positive aircraft control using basic flight maneuvers between designated hover positions, orientations, and altitudes along the lane centerline.
- Perform a series of maneuvers including climb, descend, yaw, pitch, and roll to simultaneously align with downward and forward buckets in each position.
- Land accurately on the platform with the chassis CENTERED (5 pts) within the 60 cm (24 in) diameter circle, or OFFSET (1 pt) at least one motor in the circle.
- **Alignment Points:** Capture a SINGLE IMAGE of each alignment ring throughout 1 lap through 10 positions with 20 buckets and accurate landings to score up to 100 alignment points.
- **Acuity Points:** While aligned with each bucket, identify as many acuity target gaps as possible to score up to 100 acuity points.

	OPEN TEST LANE | **POSITION**		ALIGNMENT		ACUITY
	START TIMER		ALIGN BUCKET	IMAGE POINTS	CORRECT GAPS (1 POINT EACH)
1	**LAUNCH AND HOVER OVER STAND #1**	HOVER	1	5 1	T BL R BR L
2	ALIGN WITH BOTH BUCKETS CAPTURE ONE IMAGE DOWNWARD THEN ONE IMAGE FORWARD		2A	5 1	L BR T TL R
3	**YAW <u>LEFT</u> 360° OVER STAND #1**	YAW L-360	1	5 1	T BL R BR L
4	ALIGN WITH BOTH BUCKETS CAPTURE ONE IMAGE DOWNWARD THEN ONE IMAGE FORWARD		2A	5 1	L BR T TL R
5	**YAW <u>RIGHT</u> 360° OVER STAND #1**	YAW R-360	1	5 1	T BL R BR L
6	ALIGN WITH BOTH BUCKETS CAPTURE ONE IMAGE DOWNWARD THEN ONE IMAGE FORWARD		2A	5 1	L BR T TL R
7	**CLIMB VERTICALLY OVER STAND #1**	CLIMB	1	5 1	T BL R BR L
8	ALIGN WITH BOTH BUCKETS CAPTURE ONE IMAGE DOWNWARD THEN ONE IMAGE FORWARD		3A	5 1	BR T TL R BL
9	**DESCEND VERTICALLY OVER STAND #1**	DESCEND	1	5 1	T BL R BR L
10	ALIGN WITH BOTH BUCKETS C CAPTURE ONE IMAGE DOWNWARD THEN ONE IMAGE FORWARD		2A	5 1	L BR T TL R
11	**PITCH FORWARD TO STAND #2**	FWD	2	5 1	BL T BR R TL
12	ALIGN WITH BOTH BUCKETS CAPTURE ONE IMAGE DOWNWARD THEN ONE IMAGE FORWARD		3A	5 1	BR T TL R BL
13	**PITCH BACKWARD TO STAND #1**	BKWD	1	5 1	T BL R BR L
14	ALIGN WITH BOTH BUCKETS CAPTURE ONE IMAGE DOWNWARD THEN ONE IMAGE FORWARD		2A	5 1	L BR T TL R
15	**PITCH FWD TO STAND #2 THEN YAW <u>LEFT</u> 180°**	FWD-L180	2	5 1	<u>TR B TL L BR</u>
16	ALIGN WITH BOTH BUCKETS CAPTURE ONE IMAGE DOWNWARD THEN ONE IMAGE FORWARD		1C	5 1	BR R TL L BR
17	**PITCH FWD TO LANDING THEN YAW <u>RIGHT</u> 180°**	FWD-R180	L	5 1	B TR L BL T
18	ALIGN WITH BOTH BUCKETS CAPTURE ONE IMAGE DOWNWARD THEN ONE IMAGE FORWARD		1A	5 1	TR B TR L BR
19	**LAND IN CIRCLE CENTERED (5 PTS) OR OFFSET (1 PT)**	LAND	P1	5 1	BL R TL L BL
20	COUNT SINGLE LANDING TWICE FOR ALIGNMENT SCORE CAPTURE ONE IMAGE OF P1 AND P2 ACUITY TARGETS		P2	5 1	L BR T TL B
	STOP TIMER			/100	/100
	ELAPSED TIME (MM : SS)			**PASS | FAIL** (CIRCLE ONE)	**PASS | FAIL** (CIRCLE ONE)

Traverse (MAN/PAY 2)

Open Test Lane

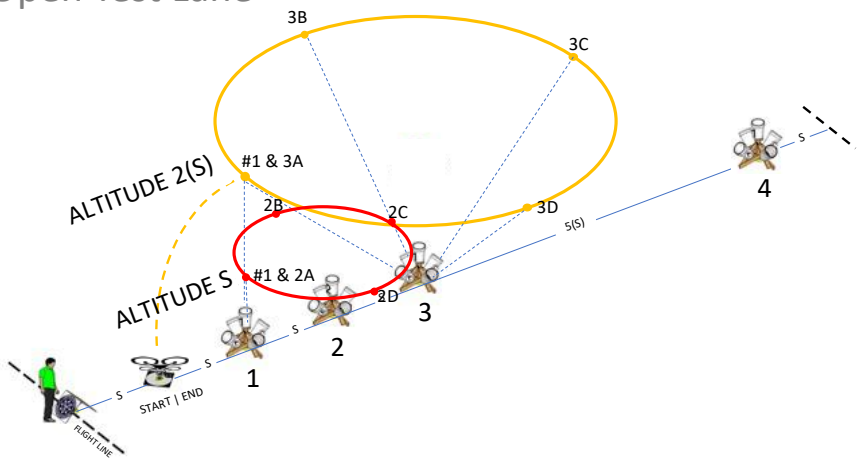


- Fly sideways parallel to objects while looking forward to identify features as if along a road, truck, bus, building, fence, tree line, etc.
- Maintain altitude (S) throughout to complete two laps in both directions around the first three omni stands.
- Land accurately on the platform with the chassis CENTERED (5 pts) within the 60 cm (24 in) diameter circle, or OFFSET (1 pt) at least one motor in the circle.
- **Alignment Points:** Capture a SINGLE IMAGE of each alignment ring throughout 2 laps with 20 buckets and accurate landings to score up to 100 alignment points.
- **Acuity Points:** While aligned with each bucket, identify as many acuity target gaps as possible to score up to 100 acuity points.

OPEN TEST LANE | **TRAVERSE**		ALIGNMENT		ACUITY
START TIMER		ALIGN BUCKET	IMAGE POINTS	CORRECT GAPS (1 POINT EACH)
1	HOVER OVER THE LAUNCH AT ALTITUDE S	ALT S – LEFTWARD	1A 5 1	TR B TR L BR
2	ORBIT 90° LEFTWARD AROUND STAND #1		1B 5 1	R TL T BL B
3	ROLL LEFTWARD TO STAND #2		2B 5 1	TL R TR L BR
4	ROLL LEFTWARD TO STAND #3		3B 5 1	B TR R BL T
5	ORBIT 90° LEFTWARD AROUND STAND #3		3C 5 1	BL R BL T BR
6	ORBIT 90° LEFTWARD AROUND STAND #3		3D 5 1	L TL R BR T
7	ROLL LEFTWARD TO STAND #2		2D 5 1	TR B TL B BL
8	ROLL LEFTWARD TO STAND #1		1D 5 1	B TL R BL T
9	ORBIT 90° LEFTWARD AROUND STAND #1		1A 5 1	TR B TR L BR
10	LAND IN CIRCLE (5 PTS CENTERED, 1 PT OFFSET)		P1 5 1	BL R TL L BL
11	HOVER OVER THE LAUNCH PLATFORM	ALT S – RIGHTWARD	1A 5 1	TR B TR L BR
12	ORBIT 90° RIGHTWARD AROUND STAND #1		1D 5 1	B TL R BL T
13	ROLL RIGHTWARD TO STAND #2		2D 5 1	TR B TL B BL
14	ROLL RIGHTWARD TO STAND #3		3D 5 1	L TL R BR T
15	ORBIT 90° RIGHTWARD AROUND STAND #3		3C 5 1	BL R BL T BR
16	ORBIT 90° RIGHTWARD AROUND STAND #3		3B 5 1	B TR R BL T
17	ROLL RIGHTWARD TO STAND #2		2B 5 1	TL R TR L BR
18	ROLL RIGHTWARD TO STAND #1		1B 5 1	R TL T BL B
19	ORBIT 90° RIGHTWARD AROUND STAND #1		1A 5 1	TR B TR L BR
20	LAND IN CIRCLE (5 PTS CENTERED, 1 PT OFFSET)		P2 5 1	L BR T TL B
STOP TIMER			/100	/100
ELAPSED TIME (MM : SS)			PASS | FAIL (CIRCLE ONE)	PASS | FAIL (CIRCLE ONE)

Orbit (MAN/PAY 3)

Open Test Lane

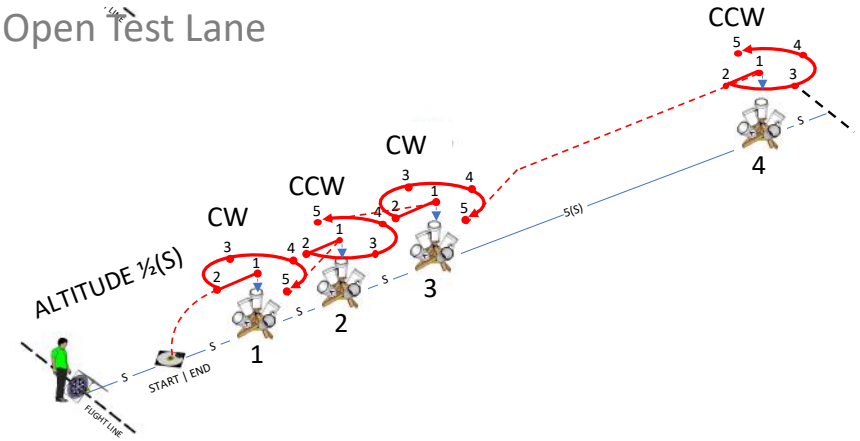


- Orbit an object at an equal altitude and radius while looking inward to identify features on four sides.
- Each orbit includes 5 bucket alignments: 1 downward radius check plus 4 angled buckets all around.
- Start aligned over omni stand #1 at altitude 2(S) to set the orbit radius around omni stand #3. Orbit both directions ending at the start point.
- Descend over omni stand #1 to altitude S to set the orbit radius around omni stand #2. Orbit both directions. Accurate landings are not included.
- **Alignment Points:** Capture a SINGLE IMAGE of each alignment ring throughout 4 orbits (leftward and rightward at each altitude) with 20 buckets to score up to 100 alignment points.
- **Acuity Points:** While aligned with each bucket, identify as many acuity target gaps as possible to score up to 100 acuity points.

OPEN TEST LANE | **ORBIT**		ALIGNMENT		ACUITY
START TIMER		ALIGN BUCKET	IMAGE POINTS	CORRECT GAPS (1 POINT EACH)
1 **ALIGN OVER STAND #1 AT ALT 2(S)** CHECK RADIUS	ALT 2(S) – LEFTWARD	1	5 1	T BL R BR L
2 **ALIGN WITH BUCKET 3A** CHECK ALTITUDE		3A	5 1	BR T TL R BL
3 **ORBIT LEFTWARD 90°**		3B	5 1	B TR R BL T
4 **ORBIT LEFTWARD 90°**		3C	5 1	BL R BL T BR
5 **ORBIT LEFTWARD 90°**		3D	5 1	L TL R BR T
6 **ALIGN OVER STAND #1 AT ALT 2(S)** CHECK RADIUS	ALT 2(S) – RIGHTWARD	1	5 1	T BL R BR L
7 **ALIGN WITH BUCKET 3A** CHECK ALTITUDE		3A	5 1	BR T TL R BL
8 **ORBIT RIGHTWARD 90°**		3D	5 1	L TL R BR T
9 **ORBIT RIGHTWARD 90°**		3C	5 1	BL R BL T BR
10 **ORBIT RIGHTWARD 90°**		3B	5 1	B TR R BL T
11 **ALIGN OVER STAND #1 AT ALT S** CHECK RADIUS	ALT S – LEFTWARD	1	5 1	T BL R BR L
12 **ALIGN WITH BUCKET 2A** CHECK ALTITUDE		2A	5 1	L BR T TL R
13 **ORBIT LEFTWARD 90°**		2B	5 1	TL R TR L BR
14 **ORBIT LEFTWARD 90°**		2C	5 1	T BL R TL B
15 **ORBIT LEFTWARD 90°**		2D	5 1	TR B TL B BL
16 **ALIGN OVER STAND #1 AT ALT S** CHECK RADIUS	ALT S – RIGHTWARD	1	5 1	T BL R BR L
17 **ALIGN WITH BUCKET 2A** CHECK ALTITUDE		2A	5 1	L BR T TL R
18 **ORBIT RIGHTWARD 90°**		2D	5 1	TR B TL B BL
19 **ORBIT RIGHTWARD 90°**		2C	5 1	T BL R TL B
20 **ORBIT RIGHTWARD 90°**		2B	5 1	TL R TR L BR
STOP TIMER			/100	/100
ELAPSED TIME (MM : SS)			PASS | FAIL (CIRCLE ONE)	PASS | FAIL (CIRCLE ONE)

Inspect (MAN/PAY 4)

Open Test Lane

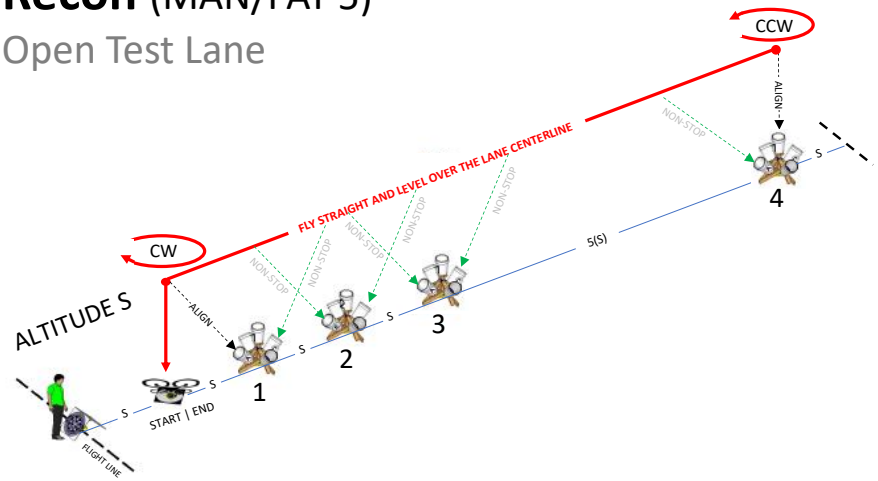


- Fly around objects in close proximity to inspect detailed features on the top and all four sides.
- Maintain altitude 1/2(S) throughout starting on top of each omni stand then rotate around all four omni bucket stands in alternating clockwise (A-B-C-D) and counter clockwise (A-D-C-B) directions.
- Accurate landings are not included.
- **Alignment Points:** Capture a SINGLE IMAGE of each alignment ring throughout 4 omni stands with 20 buckets to score up to 100 alignment points.
- **Acuity Points:** While aligned with each bucket, identify as many acuity target gaps as possible to score up to 100 acuity points.

OPEN TEST LANE | **INSPECT**		ALIGNMENT		ACUITY
START TIMER		ALIGN BUCKET	IMAGE POINTS	CORRECT GAPS (1 POINT EACH)
1 HOVER OVER STAND #1 AT ALTITUDE 1/2(S)	ALT ½(S) – LEFTWARD	1	5 1	T BL R BR L
2 PITCH BACKWARD		1A	5 1	TR B TR L BR
3 ORBIT LEFTWARD 90°		1B	5 1	R TL T BL B
4 ORBIT LEFTWARD 90°		1C	5 1	BR R TL L BR
5 ORBIT LEFTWARD 90°		1D	5 1	B TL R BL T
6 HOVER OVER STAND #2 AT ALTITUDE 1/2(S)	ALT ½(S) – RIGHTWARD	2	5 1	BL T BR R TL
7 PITCH BACKWARD		2A	5 1	L BR T TL R
8 ORBIT RIGHTWARD 90°		2D	5 1	TR B TL B BL
9 ORBIT RIGHTWARD 90°		2C	5 1	T BL R TL B
10 ORBIT RIGHTWARD 90°		2B	5 1	TL R TR L BR
11 HOVER OVER STAND #3 AT ALTITUDE 1/2(S)	ALT ½(S) – LEFTWARD	3	5 1	R TL B BL R
12 PITCH BACKWARD		3A	5 1	BR T TL R BL
13 ORBIT LEFTWARD 90°		3B	5 1	B TR R BL T
14 ORBIT LEFTWARD 90°		3C	5 1	BL R BL T BR
15 ORBIT LEFTWARD 90°		3D	5 1	L TL R BR T
16 HOVER OVER STAND #4 AT ALTITUDE 1/2(S)	ALT ½(S) – RIGHTWARD	4	5 1	TL B TR R BR
17 PITCH BACKWARD		4A	5 1	T BL B TR L
18 ORBIT RIGHTWARD 90°		4D	5 1	BR B TL B TR
19 ORBIT RIGHTWARD 90°		4C	5 1	R BL T TR B
20 ORBIT RIGHTWARD 90°		4B	5 1	TR L BL R TL
STOP TIMER			/100	/100
ELAPSED TIME (MM : SS)			**PASS | FAIL** (CIRCLE ONE)	**PASS | FAIL** (CIRCLE ONE)

Recon (MAN/PAY 5)

Open Test Lane



- Fly straight and level at a sustainable speed directly over the lane centerline to establish a stable hover over an object and perform quick reconnaissance tasks.
- Maintain altitude (S) throughout starting over the launch/land platform to align with the designated targets at both ends of the lane.
- A complete trial totals a distance of 80(S).
- Accurate landings are not included.
- **Alignment Points:** Capture a SINGLE IMAGE of each alignment ring throughout 5 laps with 20 buckets to score up to 100 alignment points.
- **Acuity Points:** While aligned with each bucket, identify as many acuity target gaps as possible to score up to 100 acuity points.

OPEN TEST LANE | **RECON**		ALIGNMENT		ACUITY				
START TIMER		ALIGN BUCKET	IMAGE POINTS	CORRECT GAPS (1 POINT EACH)				
1	FLY AT ALTITUDE S TO STAND #4	LAP 1	4	5 1	TL	B	TR	R	BR
2	YAW LEFT 180°		4	5 1	BR	T	BL	L	TL
3	FLY TO THE LAUNCH AND YAW RIGHT 180°		L	5 1	B	TR	L	BL	T
4	HOVER IN PLACE CHECK ALTITUDE S		1A	5 1	TR	B	TR	L	BR
5	FLY AT ALTITUDE S TO STAND #4	LAP 2	4	5 1	TL	B	TR	R	BR
6	YAW LEFT 180°		4	5 1	BR	T	BL	L	TL
7	FLY TO THE LAUNCH AND YAW RIGHT 180°		L	5 1	B	TR	L	BL	T
8	HOVER IN PLACE CHECK ALTITUDE S		1A	5 1	TR	B	TR	L	BR
9	FLY AT ALTITUDE S TO STAND #4	LAP 3	4	5 1	TL	B	TR	R	BR
10	YAW LEFT 180°		4	5 1	BR	T	BL	L	TL
11	FLY TO THE LAUNCH AND YAW RIGHT 180°		L	5 1	B	TR	L	BL	T
12	HOVER IN PLACE CHECK ALTITUDE S		1A	5 1	TR	B	TR	L	BR
13	FLY AT ALTITUDE S TO STAND #4	LAP 4	4	5 1	TL	B	TR	R	BR
14	YAW LEFT 180°		4	5 1	BR	T	BL	L	TL
15	FLY TO THE LAUNCH AND YAW RIGHT 180°		L	5 1	B	TR	L	BL	T
16	HOVER IN PLACE CHECK ALTITUDE S		1A	5 1	TR	B	TR	L	BR
17	FLY AT ALTITUDE S TO STAND #4	LAP 5	4	5 1	TL	B	TR	R	BR
18	YAW LEFT 180°		4	5 1	BR	T	BL	L	TL
19	FLY TO THE LAUNCH AND YAW RIGHT 180°		L	5 1	B	TR	L	BL	T
20	HOVER IN PLACE CHECK ALTITUDE S		1A	5 1	TR	B	TR	L	BR
STOP TIMER			/100					/100
ELAPSED TIME (MM : SS)			**PASS | FAIL** (CIRCLE ONE)					**PASS | FAIL** (CIRCLE ONE)