**June 29, 2016 – Marena Mesonet Station**

UTC = local time + 5 hrs

Flights conducted 50 meters from Marena Mesonet Station

Front

Back

Windsonde 741

Windsonde 739

Windsonde 742

Windsonde 738

All Windsondes located under the rotors and shielded by small PVC pipes (not in contact). See pictures below.

Flight 1 (Iris+)

Battery Number: 8

Windsondes: 741, 742, 738 & 739

Start Battery: 12.4 V

Start Direction: 253° W

Ascent Start: 10:47:37 UTC

Left 3 m hover: 10:48:01 UTC

Reached 100 m: 10:48:49 UTC

Reached 200 m: 10:49:39 UTC

Reached 300 m: 10:50:18 UTC

Started descent: 10:50:25 UTC

Landed: 10:54:43 UTC

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 3 meters to aspirate the sensors and stabilize readings. The mission to 300 meters had an ascent speed of 2.5 meters per second and a descent speed of 1.5 meters per second. We landed by activating the RTL once the copter had stabilized at 10 meters.

Flight 2 (Iris+)

Battery Number: 9

Windsondes: 741, 742, 738 & 739

Start Battery: 12.4 V

Start Direction: 253° W

Ascent Start: 10:59:38 UTC

Left 3 m hover: 10:59:52 UTC

Reached 100 m: 11:00:50 UTC

Reached 200 m: 11:01:46 UTC

Reached 300 m: 11:02:38 UTC

Started descent: 11:07:19 UTC

Landed: 11:54:43 UTC

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 3 meters to aspirate the sensors and stabilize readings. The mission to 300 meters had an ascent speed of 2.5 meters per second and a descent speed of 1.5 meters per second. We landed by activating the RTL once the copter had stabilized at 10 meters.

Flight 3 (Iris+)

Battery Number: 1

Windsondes: 741, 742, 738 & 739

Start Battery: 12.4 V

Start Direction: 253° W

Ascent Start: 11:19:15 UTC

Left 3 m hover: 11:19:28 UTC

Reached 100 m: 11:20:29 UTC

Reached 200 m: 11:21:23 UTC

Reached 300 m: 11:22:22 UTC

Started descent: 11:22:30 UTC

Landed: 11:27:00 UTC

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 3 meters to aspirate the sensors and stabilize readings. The mission to 300 meters had an ascent speed of 2.5 meters per second and a descent speed of 1.5 meters per second. We landed by activating the RTL once the copter had stabilized at 10 meters.

We changed the windsonde batteries after this flight.

Flight 4 (Iris+)

Battery Number: 2

Windsondes: 741, 742

Start Battery: 12.4 V

Start Direction: 253° W

Ascent Start: 11:43:04 UTC

Left 1m hover: 11:43:14 UTC

Reached 100m: 11:44:16 UTC

Reached 200m: 11:46:06 UTC

Reached 300m: -------- UTC

Started descent: 11:47:46 UTC

Landed: 11:50:12 UTC

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 3 meters to aspirate the sensors and stabilize readings. The mission to 300 meters had an ascent speed of 2.5 meters per second and a descent speed of 1.5 meters per second. We landed by activating the RTL once the copter had stabilized at 10 meters.

We were unable to reach 300 meters due to the copter not going up above 250 meters. We suspect that there were high winds that caused the Iris+ to not be able to climb more.

Flight 5 (Iris+)

Battery Number: 3

Windsondes: 741, 742

Start Battery: 12.4 V

Start Direction: 253° W

Ascent Start: 11:58:48 UTC

Left 1m hover: 11:59:04 UTC

Reached 100m: 12:00:00 UTC

Reached 200m: 12:00:52 UTC

Reached 300m: 12:02:14 UTC

Started decent: 12:02:27 UTC

Landed: 12:07:07 UTC

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 3 meters to aspirate the sensors and stabilize readings. The mission to 300 meters had an ascent speed of 2.5 meters per second and a descent speed of 1.5 meters per second. We landed by activating the RTL once the copter had stabilized at 10 meters.

Flight 6 (Iris+)

Battery Number: 4

Windsondes: 738, 739

Start Battery: 12.4 V

Start Direction: 253° W

Ascent Start: 12:18:40 UTC

Left 3 m hover: 12:18:55 UTC

Reached 100 m: 12:19:56 UTC

Reached 200 m: 12:21:00 UTC

Reached 300 m: 12:22:51 UTC

Started descent: 12:32:02 UTC

Landed: 12:27:26 UTC

End Battery: 10.97 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 3 meters to aspirate the sensors and stabilize readings. The mission to 300 meters had an ascent speed of 2.5 meters per second and a descent speed of 1.5 meters per second. We landed by activating the RTL once the copter had stabilized at 10 meters.

We swapped out sensor 741 & 742 for 733 and 737

Flight 7 (Iris+)

Battery Number: 5

Windsondes: 733, 737, 741, 742

Start Battery: 12.4 V

Start Direction: 253° W

Ascent Start: 12:41:41 UTC

Left 3 m hover: 12:42:00 UTC

Reached 100 m: 12:43:05 UTC

Reached 200 m: 12:44:08 UTC

Reached 300 m: 12:46:04 UTC

Started descent: 12:46:19 UTC

Landed: 12:50:55 UTC

End Battery: 10.97 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 3 meters to aspirate the sensors and stabilize readings. The mission to 300 meters had an ascent speed of 2.5 meters per second and a descent speed of 1.5 meters per second. We landed by activating the RTL once the copter had stabilized at 10 meters.

Flight 8 (Iris+)

Battery Number: 6

Windsondes: 733, 737, 741, 742

Start Battery: 12.4 V

Start Direction: 253° W

Ascent Start: 12:56:27 UTC

Left 3 m hover: 12:56:44 UTC

Reached 100 m: 12:58:15 UTC

Reached 200 m: 12:59:31 UTC

Reached 300 m: -------- UTC

Started decent: -------- UTC

Landed: 13:05:28 UTC

End Battery: 10.97 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 3 meters to aspirate the sensors and stabilize readings. The mission to 300 meters had an ascent speed of 2.5 meters per second and a descent speed of 1.5 meters per second. We landed by activating the RTL once the copter had stabilized at 10 meters.

We were unable to reach 300 meters, we reached 280 meters and were unable to go further due to high winds.

Flight 9 (Iris+)

Battery Number: 7

Windsondes: 733, 737, 741, 742

Start Battery: 12.4 V

Start Direction: 253° W

Ascent Start: 13:15:40 UTC

Left 3 m hover: 13:16:00 UTC

Reached 100 m: 13:16:50 UTC

Reached 200 m: 13:17:33 UTC

Reached 300 m: 13:18:25 UTC

Started descent: 13:18:35 UTC

Landed: 13:23:04 UTC

End Battery: 10.97 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 3 meters to aspirate the sensors and stabilize readings. The mission to 300 meters had an ascent speed of 2.5 meters per second and a descent speed of 1.5 meters per second. We landed by activating the RTL once the copter had stabilized at 10 meters.

Flight 10 (Iris+)

Battery Number: 8

Windsondes: 733, 737, 741, 742

Start Battery: 12.4 V

Start Direction: 253° W

Ascent Start: 14:03:50 UTC

Left 3 m hover: 14:04:06 UTC

Reached 100 m: 14:05:14 UTC

Reached 200 m: 14:05:58 UTC

Reached 300 m: 14:06:49 UTC

Started descent: 14:06:56 UTC

Landed: 14:11:26 UTC

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 3 meters to aspirate the sensors and stabilize readings. The mission to 300 meters had an ascent speed of 2.5 meters per second and a descent speed of 1.5 meters per second. We landed by activating the RTL once the copter had stabilized at 10 meters.

Flight 11 (Iris+)

Battery Number: 9

Windsondes: 733, 737, 741, 742

Start Battery: 12.4 V

Start Direction: 253° W

Ascent Start: 14:20:15 UTC

Left 3 m hover: 14:20:34 UTC

Reached 100 m: 14:21:35 UTC

Reached 200 m: 14:22:23 UTC

Reached 300 m: 14:23:13 UTC

Started descent: 14:23:17 UTC

Landed: 14:27:42 UTC

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 3 meters to aspirate the sensors and stabilize readings. The mission to 300 meters had an ascent speed of 2.5 meters per second and a descent speed of 1.5 meters per second. We landed by activating the RTL once the copter had stabilized at 10 meters.

Flight 12 (Solo)

Battery Number: 1

Start Battery: 12.4 V

Start Direction: 253° W

Ascent 1 Start: 14:37:36 UTC

Started descent: -------- UTC

Landed: 14:39:54 UTC

Ascent 2 Start: 14:40:04 UTC

Started descent: 14:41:15 UTC

Landed: 14:42:25 UTC

Ascent 3 Start: 14:42:33 UTC

Started descent: 14:43:48 UTC

Landed: 14:44:59 UTC

Ascent 4 Start: 14:45:09 UTC

Started descent: 14:46:19 UTC

Landed: 14:47:40 UTC

Remarks: The flight plan was to fly to 120 meters and come down 4 times. The ascent would be at max throttle and the descent would be done by triggering RTL.

Flight 13 (Solo)

Battery Number: 2

Start Battery: 12.4 V

Start Direction: 253° W

Ascent 1 Start: 15:07:05 UTC

Started descent: 15:08:11 UTC

Landed: 15:09:22 UTC

Ascent 2 Start: 15:09:32 UTC

Started descent: 15:10:41 UTC

Landed: 15:11:53 UTC

Ascent 3 Start: 15:12:01 UTC

Started descent: 15:13:16 UTC

Landed: 15:14:25 UTC

Ascent 4 Start: 15:14:35 UTC

Started descent: 15:15:46 UTC

Landed: 15:16:56 UTC

Remarks: The flight plan was to fly to 120 meters and come down 4 times. The ascent would be at max throttle and the descent would be done by triggering RTL.

Flight 14 (Iris+)

Battery Number: 2

Start Battery: 12.4 V

Start Direction: 253° W

Ascent Start: 16:53:11 UTC

Arrived at center of circle: 16:54:00 UTC

Left 15 m hover: 16:54:21 UTC

Started descent: 16:57:04 UTC

Finished descent: 17:00:50 UTC

Arrived back over landing zone: 17:01:43 UTC

Landed: 17:02:28 UTC

End Battery: 10.9 V

Remarks: The flight plan was to fly to 300 meters at the center of the Kentucky loiter circle to test the flight plan. We will take off and hover at 15 meters to aspirate the sensors and stabilize their readings. Then we will fly over to the center of their circle and fly to 300 meters. We would descend in the same spot to 15 meters and then move back to the home location at 15 meters. The using the RTL, the copter would land. The mission to 300 meters had an ascent speed of 2.5 meters per second and a descent speed of 1.5 meters per second.

Flight 15 (Iris+)

Battery Number: 3

Windsondes: 737, 740, 741, 742

Start Battery: 12.4 V

Start Direction: 253° W

Ascent Start: 17:12:21 UTC

Arrived at center of circle: 17:13:12 UTC

Left 15 m hover: 17:13:25 UTC

Reached 100 m: 17:14:05 UTC

Reached 200 m: 17:14:54 UTC

Reached 300 m: 17:15:36 UTC

Started descent: 17:15:47 UTC

Finished descent: 17:19:22 UTC

Arrived back over landing zone: 17:19:52 UTC

Landed: 17:20:38 UTC

End Battery: 10.9 V

Remarks: The flight plan was to fly to 300 meters at the center of the Kentucky loiter circle to test the flight plan. We will take off and hover at 15 meters to aspirate the sensors and stabilize their readings. Then we will fly over to the center of their circle and fly to 300 meters. We would descend in the same spot to 15 meters and then move back to the home location at 15 meters. The using the RTL, the copter would land. The mission to 300 meters had an ascent speed of 2.5 meters per second and a descent speed of 1.5 meters per second.

Flight 16 (Iris+)

Battery Number: 4

Windsondes: 737, 740, 741, 742

Start Battery: 12.4 V

Start Direction: 253° W

Ascent Start: 18:09:25 UTC

Arrived at center of circle: 18:10:18 UTC

Left 15 m hover: 18:10:75 UTC

Reached 100 m: 18:11:07 UTC

Reached 200 m: 18:11:55 UTC

Reached 300 m: 18:12:45 UTC

Started descent: 18:12:50 UTC

Finished descent: 18:18:00 UTC

Arrived back over landing zone: 18:17:13 UTC

Landed: 17:20:38 UTC

End Battery: 10.9 V

Remarks: The flight plan was to fly to 300 meters at the center of the Kentucky loiter circle to test the flight plan. We will take off and hover at 15 meters to aspirate the sensors and stabilize their readings. Then we will fly over to the center of their circle and fly to 300 meters. We would descend in the same spot to 15 meters and then move back to the home location at 15 meters. The using the RTL, the copter would land. The mission to 300 meters had an ascent speed of 2.5 meters per second and a descent speed of 1.5 meters per second.