**June 28, 2016 – OSU UAS Airfield**

UTC = local time + 5 hrs

Flights conducted at the OSU UAS Airfield

Front

Back

Windsonde 733

& 741

Windsonde 739

Windsonde 737

&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: 1

Windsondes: 733, 737, 738 & 739

Start Battery: 12.3 V

Start Direction: 96° E

Ascent Start: 10:43:08 UTC

Left 10m hover: 10:43:26 UTC

Reached 100m: 10:44:16 UTC

Reached 200m: 10:45:00 UTC

Reached 300m: 10:45:44 UTC

Started decent: 10:45:53 UTC

Landed: 10:50:17 UTC

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters. The pre-mission test fight included brief photo op with the sunrise. We will take off and hover at 10m to aspirate the sensors and stabilize readings. The mission to 300 meters had an ascent speed of 2.5 meters per second and a decent 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: 2

Windsondes: 733, 737, 738 & 739

Start Battery: 12.5 V

Start Direction: 96° E

Ascent Start: 10:57:48 UTC

Left 10m hover: 10:58:13 UTC

Reached 100m: 10:59:02 UTC

Reached 200m: 10:59:45 UTC

Reached 300m: 11:00:30 UTC

Started decent: 11:00:40 UTC

Landed: 11:05:01 UTC

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 10 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.

A post flight inspection revealed that the back left prop showed signs of wear. We will continue to monitor the status of the prop and change it if it becomes a safety problem.

Flight 3 (Iris+)

Battery Number: 3

Windsondes: 733, 737, 738 & 739

Start Battery: 12.5 V

Start Direction: 96° E

Ascent Start: 11:12:48 UTC

Left 10m hover: 11:13:02 UTC

Reached 100m: 11:13:55 UTC

Reached 200m: 11:14:39 UTC

Reached 300m: 11:15:21 UTC

Started decent: 11:15:29 UTC

Landed: 11:19:50 UTC

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 10 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 4 (Iris+)

Battery Number: 4

Windsondes: 733, 737, 738 & 739

Start Battery: 12.5 V

Start Direction: 96° E

Ascent Start: 11:27:51 UTC

Left 10m hover: 11:28:15 UTC

Reached 100m: 11:28:58 UTC

Reached 200m: 11:29:48 UTC

Reached 300m: 11:30:27 UTC

Started decent: 11:30:35 UTC

Landed: 11:34:57 UTC

End Battery: 11.4 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 10 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 decent speed of 1.5 meters per second. We landed by activating the RTL once the copter had stabilized at 10 meters.

Flight 5 (Iris+)

Battery Number: 5

Windsondes: 733, 737, 738 & 739

Start Battery: 12.5 V

Start Direction: 96° E

Ascent Start: 11:42:46 UTC

Left 10m hover: 11:43:11 UTC

Reached 100m: 11:44:01 UTC

Reached 200m: 11:44:38 UTC

Reached 300m: 11:45:25 UTC

Started decent: 11:45:32 UTC

Landed: 11:50:00 UTC

End Battery: 11.4 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 10 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: 6

Windsondes: 733, 737, 738 & 739

Start Battery: 12.5 V

Start Direction: 96° E

Ascent Start: 11:59:14 UTC

Left 10m hover: 11:59:39 UTC

Reached 100m: 12:00:23 UTC

Reached 200m: 12:01:06 UTC

Reached 300m: 12:01:46 UTC

Started decent: 12:01:56 UTC

Landed: 12:06:23 UTC

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 10 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 7 (Iris+)

Battery Number: 7

Windsondes: 733, 737, 738 & 739

Start Battery: 12.5 V

Start Direction: 96° E

Ascent Start: 12:12:51 UTC

Left 10m hover: 12:13:10 UTC

Reached 100m: 12:13:50 UTC

Reached 200m: 12:14:35 UTC

Reached 300m: 12:15:20 UTC

Started decent: 12:15:27 UTC

Landed: 12:19:47 UTC

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 10 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: 8

Windsondes: 733, 737, 738 & 739

Start Battery: 12.5 V

Start Direction: 96° E

Ascent Start: 12:28:27 UTC

Left 10m hover: 12:28:45 UTC

Reached 100m: 12:29:32 UTC

Reached 200m: 12:30:16 UTC

Reached 300m: 12:31:01 UTC

Started decent: 12:31:07 UTC

Landed: 12:35:42 UTC

End Battery: 11.1 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 10 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 had been having issues with Sensor 737 for a few flights. After this flight we replaced the sensor for Sensor 742. We also had filled the memory of Sensor 733 which we replaced with 741.

Flight 9 (Iris+)

Battery Number: 9

Windsondes: 738 & 739

Start Battery: 12.5 V

Start Direction: 96° E

Ascent Start: 12:54:21 UTC

Left 10m hover: 12:54:50 UTC

Reached 100m: 12:55:37 UTC

Reached 200m: 12:56:16 UTC

Reached 300m: 12:57:00 UTC

Started decent: 12:57:07 UTC

Landed: 13:01:30 UTC

End Battery: 11.1 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 10 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.

The two new Windsonde sensors were unable to connect to the ground station before flight, so we flew with only 2 sensors. We swapped out all of the Windsonde sensor batteries after this flight.

Flight 10 (Iris+)

Battery Number: 1

Windsondes: 738 & 739

Start Battery: 12.5 V

Start Direction: 96° E

Ascent Start: 13:12:44 UTC

Left 10m hover: 13:12:53 UTC

Reached 100m: ----------- UTC

Reached 200m: 13:14:19 UTC

Reached 300m: 13:15:02 UTC

Started decent: 13:15:11 UTC

Landed: 13:19:53 UTC

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 10 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: 2

Windsondes: 738 & 739

Start Battery: 12.5 V

Start Direction: 96° E

Ascent Start: 13:27:30 UTC

Left 10m hover: 13:27:47 UTC

Reached 100m: 13:28:32 UTC

Reached 200m: 13:29:15 UTC

Reached 300m: 13:29:57 UTC

Started decent: 13:30:05 UTC

Landed: 13:34:37 UTC

End Battery: 11.2 V

Remarks: The flight plan was to fly to 300 meters. We will take off and hover at 10 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: 16.5 V

Start Direction: 96° E

Ascent 1 Start: 16:15:49 UTC

Reached 120m: 16:16:58 UTC

Landed: 16:18:55

Ascent 2 Start: 16:19:02 UTC

Reached 120m: 16:20:12 UTC

Landed: ----------------- UTC

Ascent 3 Start: 16:23:01 UTC

Reached 120m: 13:24:10 UTC

Landed: 16:25:19 UTC

Remarks: The flight plan was to fly to 120 meters at maximum ascent rate. Once we reach the top we, will activate the RTL and land. We planed on doing this four times. We only achieved 3 flights because we had some issues with the return to home exiting when we had two devices connected. The third ascent went much smoother with only one device connected.

Flight 13 (Solo)

Battery Number: 2

Start Battery: 16.5 V

Start Direction: 96° E

Ascent 1 Start: 16:37:05 UTC

Reached 120m: 16:38:16 UTC

Landed: 16:39:23

Ascent 2 Start: 16:39:33 UTC

Reached 120m: 16:40:44 UTC

Landed: 16:41:53

Ascent 3 Start: 16:42:00 UTC

Reached 120m: 16:43:08 UTC

Landed: 16:44:18 UTC

Ascent 4 Start: 16:44:35 UTC

Reached 120m: 16:45:44 UTC

Landed: 16:46:33 UTC

Remarks: The flight plan was to fly to 120 meters at max ascent rate. Once we reach the top, we will activate the RTL and land. We planed on doing this four times. Flight 1 no rotation.

Flight 14 (Iris+)

Battery Number: 2

Windsondes: none

Start Battery: 12.5 V

Start Direction: 7° N

End Battery: 11.2 V

Remarks: The flight plan was to fly to 300 meters near the Kentucky tower to test the program for later use. We will take off and hover at 10 meters to aspirate the sensors and stabilize readings. The mission to 300 meters had an assent speed of 2.5 meters per second and a decent speed of 1.5 meters per second. We landed by activating the RTL once the copter had stabilized at 10 meters.

Flight 15 (Iris+)

Battery Number: 3

Windsondes: 741, ~~742~~, 738 & 739

Start Battery: V

Start Direction: 7° N

Ascent Start: 18:32:40 UTC

Left 10m hover: 18:33:29 UTC

Started decent: 18:35:51 UTC

Landed: 18:40:09UTC

End Battery: V

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

Windsonde 742 was not reading temperature data but was connected to the dongle suggesting that the sensor is broken.

Flight 16 (Iris+)

Battery Number: 4

Windsondes: 741, ~~742~~, 738 & 739

Start Battery: 12.5 V

Start Direction: 7° N

Ascent Start: 18:41:33 UTC

Left 10m hover: 18:41:55 UTC

Reached 100m: 18:42:46 UTC

Reached 200m: 18:43:23 UTC

Reached 300m: 18:44:07 UTC

Started decent: 18:44:17 UTC

Landed: 18:48:37

End Battery: 11.3 V

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

Note: Windsonde 742 is working. We had a bad wand to base connection. It was fixed after this flight.

Flight 17 (Iris+)

Battery Number: 6

Windsondes: 741, 742, 738 & 739

Start Battery: 12.4 V

Start Direction: 7° N

Ascent Start: 20:07:53 UTC

Left 10m hover: 20:09:08 UTC

Reached 100m: 20:09:50 UTC

Reached 200m: 20:10:44 UTC

Reached 300m: 20:11:36 UTC

Started decent: 20:11:44 UTC

Landed: 20:16:11

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters by the Kentucky tower within their plane circle. We will take off and hover at 10 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 18 (Iris+)

Battery Number: 7

Windsondes: 741, 742, 738 & 739

Start Battery: 12.4 V

Start Direction: 7° N

Ascent Start: 20:18:22 UTC

Left 10m hover: 20:18:36 UTC

Reached 100m: 20:19:20 UTC

Reached 200m: 20:20:07 UTC

Reached 300m: 20:20:56 UTC

Started decent: 20:21:02 UTC

Landed: 20:25:36

End Battery: 11.3 V

Remarks: The flight plan was to fly to 300 meters by the Kentucky tower within their plane circle. We will take off and hover at 10 meters to aspirate the sensors and stabilize readings. The mission to 300 meters had an assent speed of 2.5 meters per second and a decent speed of 1.5 meters per second. We landed by activating the RTL once the copter had stabilized at 10 meters.