| **MISSION PLAN** | | | |
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| **FLIGHT ID** | 20240815I1 | **STORM** | Ernesto |
| **MISSION ID** | WB05A | **TAIL NUMBER** | NOAA-43 |
| **TASKING** | HRD APHEX | **PLANNED PATTERN** | RICO SUAVE |
| **MISSION SUMMARY** | | | |
| **TAKEOFF [UTC]** | 1408 | **LANDING [UTC]** | 2200 |
| **TAKEOFF LOCATION** | Wilmington | **LANDING LOCATION** | Wilmington |
| **FLIGHT TIME** |  | **BLOCK TIME** |  |
| **TOTAL REAL-TIME RADAR ANALYSES**  **(Transmitted)** | 4 passes (0) | **TOTAL DROPSONDES Deployed (Tx to GTS)** | 22 (21) |
| **OCEAN EXPENDABLES deployed (good)** | 3 AOC AXBTs (0) | **sUAS (Type)** | 2 (Back Swift S0) |
| **APHEX EXPERIMENTS / MODULES** | RICO-SUAVE, CHAOS | | |
| **HRD CREW MANIFEST** | | | |
| **LPS ONBOARD** | J. Zhang | **LPS GROUND** | Looney/Dunion |
| **TDR ONBOARD** | n/a | **TDR GROUND** | n/a |
| **ASPEN ONBOARD** | n/a | **ASPEN GROUND** | Sellwood |
| **NESDIS SCIENTISTS** | n/a | | |
| **GUESTS (Affiliation)** | Mikal Montgomery , Jack Elston (Blackswift), Josh Fromm (Blackswift) | | |
| **AOC CREW MANIFEST** | | | |
| **PILOTS** | Abitbol (primary), Wood/Tarabehhi (co pilots) | | |
| **NAVIGATOR** | Schaefer | | |
| **FLIGHT ENGINEERS** | Stokes/Dihoc | | |
| **FLIGHT DIRECTOR** | Kalen | | |
| **DATA TECHNICIAN** | McAlister | | |
| **AVAPS** | Keller | | |

| **PRE-FLIGHT** | |
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| **Flight Plan** |  |
| **Expendable Distribution** | *15 dropsondes*  *3 AXBTS*  *2 sUAS (S0)* |
| **Preflight Weather Briefing** |  |
| **Instrument Notes** | *[What instruments are working, not working, not functioning nominally, not installed?]* |

| **IN-FLIGHT** | |
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| **Time [UTC]** | **Event** |
| 1408 | Take-off from Wilmington |
| 1431 | Doing dry run for s0 and pre-launch checklist, went well |
| 1441 | Flight orbiting due to some kind of air-space reservation deconfliction, should be back on track soon |
| 1523 | Running another s0 dry run, went well |
| 1525 | 40 min from IP |
| 1532 | ~10 min from reaching the outer convection |
| 1539 | TDR is online and operational |
| 1600 | 10 min from IP, descending |
| 1605 | SD-1069 currently at 24.78177 N, 67.20799 W |
| 1606 | N42 noted that they ran TDR today as well and that data should be up today |
| 1608 | based on IR, some decently dry air starting to wrap around to the S of the center...looks like flight is in a pocket of it now, Center appears to be completely filled in |
| 1610 | SD too far from WP2 to chase, may be near downwind 2-3 |
| 1613 | Sonde 1 IP, NW-SE pass |
| 1621 | Pre-launch checklist started |
| 1623 | Sonde #2 MP - NW, likely a bad sonde, backup sonde released |
| 1634 | Supercombo (sonde + BT), sUAS out, S0 #1 has got comms, so far so good; Center sonde 976 mb, 18 kt winds 95 deg |
| 1636 | S0 #1 descending to 1500 m then will start flying toward the eyewall/RMW |
| 1639 | Failed BT |
| 1640 | Sonde 5, RMW SE charged to HR, will be used for comparison to S0 #1 data |
| 1646 | S0 #1 still doing well, 45 kt winds from s0 in air ops |
| 1648 | Drop 6, CH6, mid point SE |
| 1656 | S0 #1 still flying |
| 1657 | Mikal noted 60 kts from S0 #1 |
| 1657 | EP1, drop 7, CH7, good drop, SE |
| 1700 | Flight went ~29 n mi W of the saildrone |
| 1702 | G-IV flew within 20 n mi of the P3, just a lot higher (45k ft versus 7.7k ft for P3) |
| 1704 | Shortened outbound leg to help S0 #1 comms, just in case |
| 1705 | S0 #1 doing well, descent to 1000 m, S0 #1 reached 1000 m |
| 1706 | 64+ kts winds from S0 #1 |
| 1708 | air ops set very nice now. We can see flight level and S0 #1 winds and tracks |
| 1710 | Plan to go to 500 m, then 250 m, then maybe 10 m, but SD reported 8.9 m waves, so may try for 20 m or 30 m |
| 1711 | Battery at 52%, |
| 1712 | New S0 #1 plan to do 500m, then 250 m, then 100 m, then 50 m, then whatever altitude lower than 50 m |
| 1717 | IP2, drop 8, CH8, good sonde |
| 1725 | Starting descent to 200 m, reached 200 m |
| 1726 | Next S0 dropped at WP5, then fly downwind to SD |
| 1727 | 34% battery left |
| 1730 | 31% battery left |
| 1739 | 20% battery left |
| 1748 | 11% battery, keep at 10-20 m |
| 1750 | Ran out of battery, 76 min flight |
| 1804 | EP2, drop 14, CH6 good sonde |
| 1813 | Running 2nd S0 launch checklist |
| 1815 | Preparing launch 2nd S0  Dry air E of center |
| 1820 | Possible eyewall formation to the E |
| 1822 | Super combo (S0 #2, Sonde, BT) launched. SE of planned WP5 away from some convection |
| 1830 | S0 #2 is flying |
| 1831 | At 1500 m altitude, comms good, doing inflow module with stepped descent |
| 1833 | Unable to see S0 #2 wind in air ops, but can see T and altitude and q. Jack from Blackswift can see winds, so problem in software for air ops |
| 1834 | Going to test range this flight, going to fly all the way N, 180 n mi |
| 1837 | S0 #2 started descending to 1000 m |
| 1843 | S0 #2 still running, range 60 n mi |
| 1841 | Drop 16, MP, CH8, good sonde |
| 1848 | Flying between the eyewall and rainband |
| 1848 | RMW drop 17, CH1, good sonde |
| 1849 | Lev notes almost looks like some of the dry air got ingested and the center is reforming around that. Hard to tell though, and with the current heading, flight may get near it or just west of the center..but then again, the storm could be tilted |
| 1850 | S0 #2 at 750 m, headed to 500m then 250, then 100, then 50, then 20. Range at 74 n mi |
| 1855 | Center drop, drop 18, CH2, good sonde |
| 1858 | S0 #2 at 500 m |
| 1858 | RMW drop 19, CH3, good sonde |
| 1901 | 70% battery left on S0 #2, 96 n mi range |
| 1910 | 126 n mi range fro, S0 #2 |
| 1914 | EP3, drop 21, CH5, good sonde |
| 1916 | S0 #2 comms lost at 143 n mi range during turn - regained comms inbound |
| 1920 | Should be at 50 m, comms slow, but present |
| 1922 | Comms believed to be back |
| 1922 | Likely returning low-frequency data would be Jun’s guess |
| 1924 | RMW drop 22, CH6, good sonde (last report labeled) |
| 1930 | S0 #2 splashed, ~67 min flight, battery at 35% |
| 1935 | Doing center fix, then headed through eye wall and outbound for home |
| 1940 | All 3 BTs failed, S0 should give an estimate of SST (confirmed with Jack) |
|  |  |
| 2002 | ETA to KILM 2145 |
| 2018 | 22 drops total 21 transmitted |
| 2029 | Flight looks to be going through some outflow from the TC |
| 2015 | TDR turned off |
| 2030 | Flying in outflow region heading home - saw gravity waves in cloud structure from the plane |
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| **POST-FLIGHT** | |
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| **Mission Summary** | *[Short description of interesting observations from the flight; what objectives were successful? What was unsuccessful? Was the planned pattern flown? What deviations occurred?*  *[Don’t forget to fill in Tables on page 1]*  *[Sonde and ocean expendable accounting: how many total of each? How many are charged to each account?]* |
| **Actual Standard Pattern Flown** | *[Butterfly, Rotated Figure-4, Lawnmower, etc]*  Butterfly |
| **APHEX Experiments / Modules Flown** | [*RICO SUAVE*](https://www.aoml.noaa.gov/wp-content/uploads/2024/04/2024HFP_MatureStage_Flight_Patterns_RICO_SUAVE.pdf)*: RMW module and Inflow module* |
| **Plain Language Summary** | *[Boil down the above into a couple of bullet points in “plain language”. This will help us when we report to management & OAR Public Affairs and prepare storm mission summaries]* |
| **Instrument Notes** | *[Notes about instrument status from during and after the mission]* |
| **Final Mission Track** | *[Insert MTS screenshot of final flown track, ideally at the completion of the pattern with satellite imagery]* |