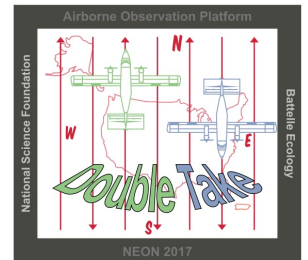




March 24, 2018 Payload 3 Daily Flight Report



Date: 03-24-18

Flight Campaign ID: 2018_P3C1

Airport, FBO ID, City: Boulder Municipal Airport (KBDU) – Boulder, CO

Domain: 10

Sites Flown: B10D (Riegl Borelight Calibration), W10C (Wiggle Timing Test)

Days left in Domain: 5

Report Author: Mitch Haynes

Flight Crew: Mitch Haynes, Cameron Chapman, Robb Walker

Ground/GPS Crew: Mike Wussow

Pilots: Stephen Brawdars, Mike Francis

Additional Personnel: None

GPS Instruments: GPS01-FBO_KBDU, U-CHLL

Flight Hours: 3:04

Hours until aircraft maintenance: 111.82

Summary: With Payload 3 set to depart next Friday (3/30) for Fresno to collect in D17 and an unfavorable five-day forecast, it was decided to collect the Riegl Borelight Calibration over Greeley and Wiggle Timing Test under non-green conditions.

New Faults:

- RiAcquire - Received several 'INS-GPS 1' errors on RiAcquire during today's flight that don't look familiar (see screenshot below). Will investigate to see what these errors mean and why they're being received.
- Hotel Kit 3 – SBET plots are failing to generate in QAQC. Extractions otherwise occurring properly.
- Grafana Dashboard – No Environmental Pressure and Humidity Readings being received, even after reset
- Database – Flight lines from Lidar logs not being placed in PDF logs, only CSV.

Ongoing Faults:

- Flight Plans – All 2018 Riegl flight plan kml's do not load markers onto DCC software. Newly created flight plan kmls did not resolve the issue.
- Lidar – Error message on RiAcquire "LASER_HEARTBEAT_TIMEOUT_EXPIRED" and happened again on one of today's lines. Believed to be related to lost connection with scanner.
- Flight Disks - MIDAS disks from Disk Set 2 were not recognized by MIDAS computer during system startup on 3/21/18. Disk set has been removed from rotation till issue is resolved.
- Lidar – Remote Desktop to RiAcquire lost connection several times in-flight. Issue is believed to be isolated to the Ethernet connection. New Ethernet cable attached on 2018-03-22, but same issues occurred. On today's flight 2018032414, several lost connections occurred for the Remote Desktop to both RiAcquire and Tracker snapSHOT, which effected the pilot display. Issue will continue to be monitored.
- Spectrometer – Shutter on NIS not closed at request of the lab manager due to a known malfunction

Resolved Faults:

- Flight Plans – Previous reported "Laser settings on new V10C flight plan provided for flight 2018032218 were wack" due to strange lidar and swath returns. Issue was believed to be fixed after switching to older version of flight plan, however a complete power cycling also occurred while changing plans.

Since this error was recorded, lidar parameter settings have been looked at and determined to be fine, and all other newly produced flight plans had normal returns and swath data. During today's flight, a similarly strange swath return was once again recorded under a similar scenario (attempting to change flight plans), and it was discovered that the error was due to failing to re-initiate the RiAcquire INS-GPS after changing flight plans. Once the INS-GPS was re-initiated, lidar returns were normal. Steps for changing flight plans in flight are now being added to the Riegl Operations Procedures to prevent this from occurring again. The ASO responsible for this mistake would also like to formally apologize to the flight planner for calling his lidar parameters wack. They were not wack. The only thing that was wack was how quickly this ASO jumped to conclusions.

- **Flight Disks** – On Disk Set 3, previous flight data on Midas1 disk could not be deleted due to “folder permission errors”. Due to the current shortage of flight disks, disk set 3 was used for flight 2018032218, which two flights worth of data now recorded on Midas1. The data that was unable to be deleted previously was successfully deleting on the hotel kit, which means the disk set can be returned into rotation. For now, FltOps is viewing this as an isolated issue, but will continue to monitor this disk set, and whether Hotel Kit permissions and procedures need to be modified to prevent future permission errors.

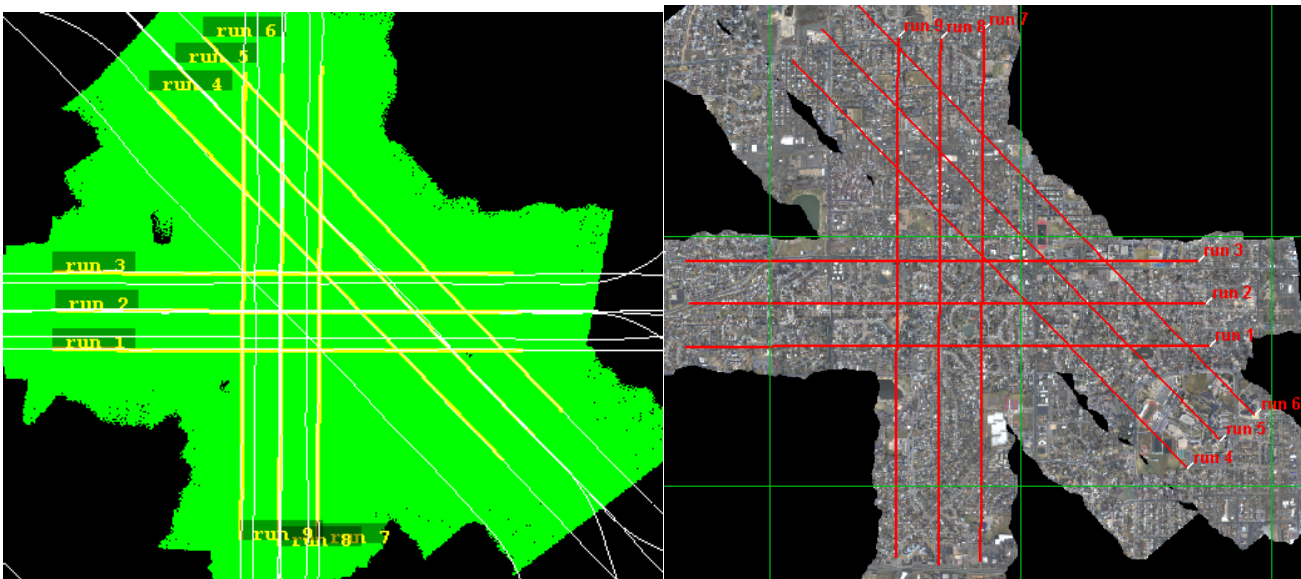
Other Issues & Concerns: None

Comments:

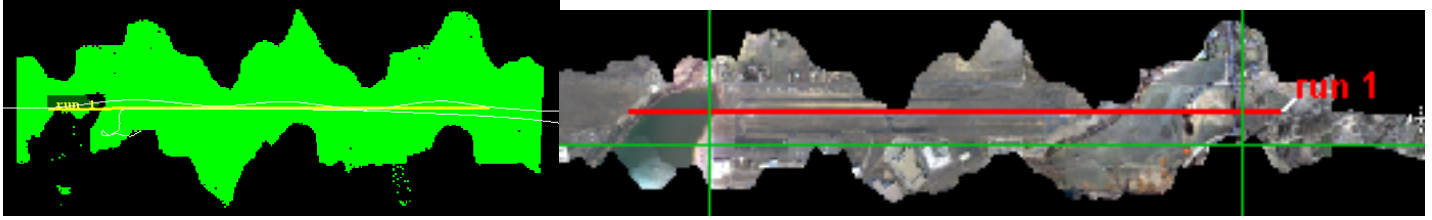
- Cam completed his NIS re-certification
- Robb completed his first NIS observation flight
- Decimated LAS File Placement: Updated flight plans continue to place decimated LAS files on the D Drive. Steps are being added to procedures for ASOs to check placement of LAS files and how to properly implement them onto the MIDAS2 file structure, with Hotel Kit code being updated on where to look for them.

Flight Screenshots:

B10D (Riegl Boresight Calibration)



W10C (Wiggle Timing Test)



Undetermined RiAcquire INS-GPS 1 Error – Requires more investigating

Messages		
2018-03-24 17:46:54....	2018-03-24 17:47:54.668/6...	'PC Card' of 'INS-GPS 1' changed to 'Writing'.
2018-03-24 17:46:59....	2018-03-24 17:47:58.794/6...	Status of 'INS-GPS 1' is ERROR
2018-03-24 17:46:59....	2018-03-24 17:47:59.430/6...	'Data Status' of 'INS-GPS 1' changed to 'Format'.
2018-03-24 17:47:00....	2018-03-24 17:48:00.444/6...	'Data Status' of 'INS-GPS 1' changed to 'OK'.

Flight Photos

Sky Conditions over Greeley during today's flight. Less than ideal for Boresight, but given the forecast before the plane leaves for D17, it was determined that collecting today was the best action to take.



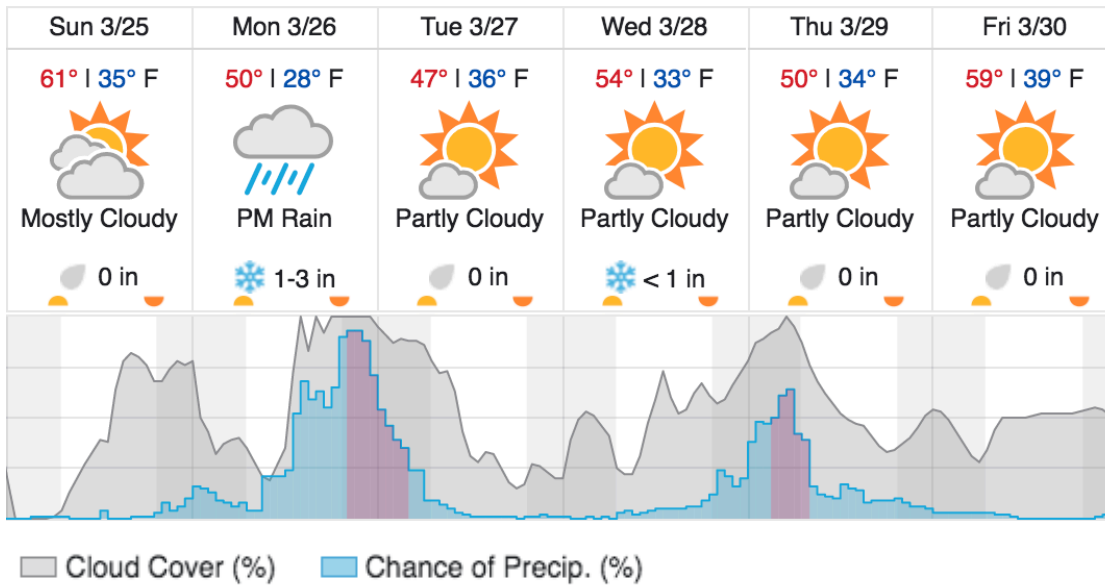
Daily Domain Coverage: N/A

Cumulative Domain Coverage:

Calibration Flights Completed: Nominal Runway Survey, NEON HQ Lidar Validation, Greeley Boresight, Wiggle Timing Test

Not Complete: Table Mountain Radiometric, NIS Offset Flight

Weather Forecast:



Flight Collection Plan for 25 March 2018

Down Day - No Flights Planned

Flight Collection Plan for 26 March 2018

Flyority 1

Collection Area: Table Mountain Radiometric Calibration

Flight Plan Name: D10_R10C_Rad_Cal_TMBT_v1_Q780.rpp

On Station Time: 1740 Local / 1140 UTC (45°)

Flyority 2

Collection Area: NIS Offset Flight

Flight Plan Name: D10_O10B_NIS_Offset_v2_Q780.rpp

On Station Time: 1700 Local / 1100 UTC (40°)

Flyority 3

Collection Area: Greeley Boresight Calibration (re-fly if Green)

Flight Plan Name: D10_B10D_Boresight_Apx_Q780.rpp

On Station Time: 1550 Local / 0950 UTC (30°)

Crew: Mike Wussow (Lidar), Mitch Haynes (Trainer), Robb Walker (NIS), Ivana Vu (Ground)