WOOLPERT

QUALITY ASSURANCE REPORT

Lidar and Concurrent Imagery Collection, Processing and Shoreline Mapping, in Pacific Islands, Particularly in American Samoa

Prepared For:

National Oceanic and Atmospheric Administration

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. Introduction

Woolpert was contracted by the National Oceanic and Atmospheric Administration's National Geodetic Survey (NOAA NGS) to provide topographic and bathymetric lidar data, and digital imagery for project AS2201-TB-C: American Samoa Shoreline Mapping. All data were acquired using Wolpert's Leica HawkEye 4X system to meet the requirements of the project.

Details of the survey, data processing, quality control (QC), and product creation are provided in detail within this report.

1.1 Survey Area

The project areas cover approximately 670 square kilometers of topographic and bathymetric lidar and digital imagery collection for Tutuila Island; Tau Island; Ofu and Olosega Island; Rose Atoll; and Swains Island in American Samoa.

The project area was split into survey blocks, allowing flight lines to be planned in the most efficient manner. Lidar data was collected to support 100% coverage to meet IHO Order-2b specifications.

Table 1. Survey Blocks

Area	Area (km^2)	Survey Block(s)
Ofu and Olosega	55	BL30, BL31, BL32, BL33, BL34, BL35, BL36, BL37, BL38, BL39, BL41, BL43
Rose Atoll	10	BL11
Sea Mounts	3	BL12
Swains Island	6	BL10
Tau	75	BL15, BL20, BL21, BL22, BL23, BL24, BL25, BL26, BL28, BL29
Tutuila	516	BL02, BL03, BL04, BL05, BL06, BL07, BL08, BL09, BL50, BL51, BL52, BL53, BL54, BL55, BL56, BL57, BL58, BL59

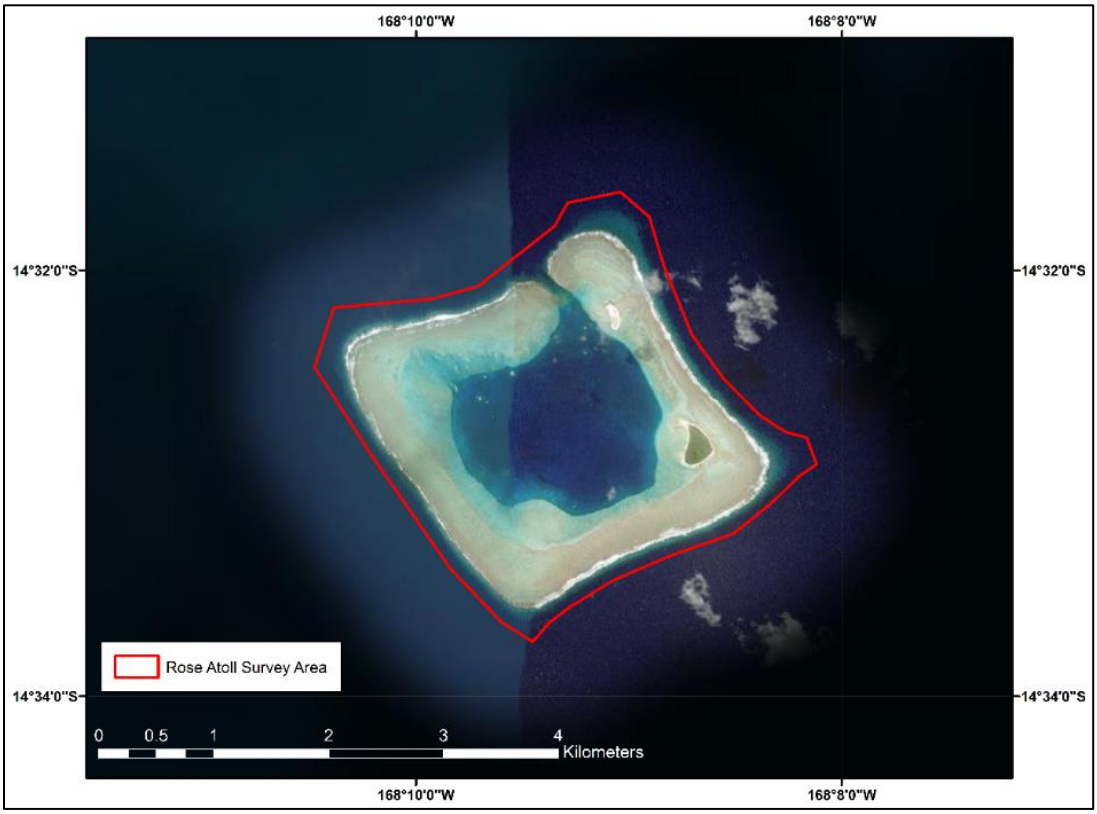

Figure 1. Rose Atoll

Figure 2. Swains Island

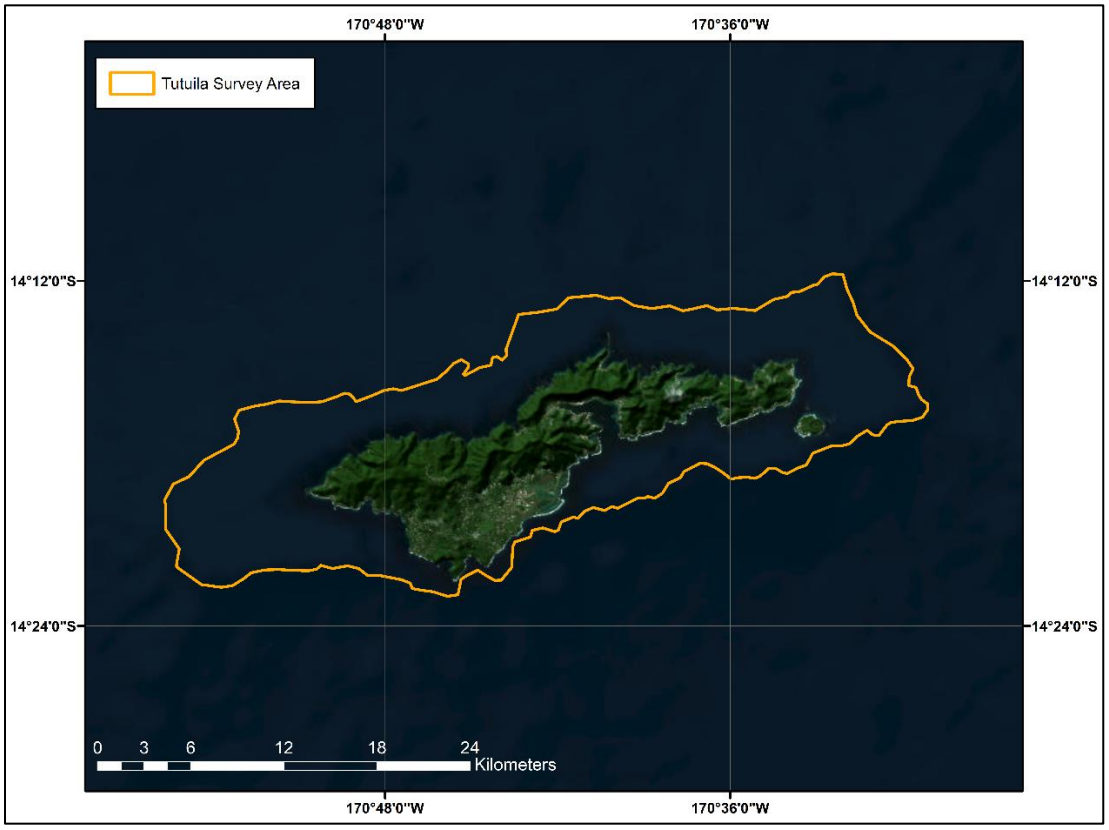

Figure 3. Tutuila Island

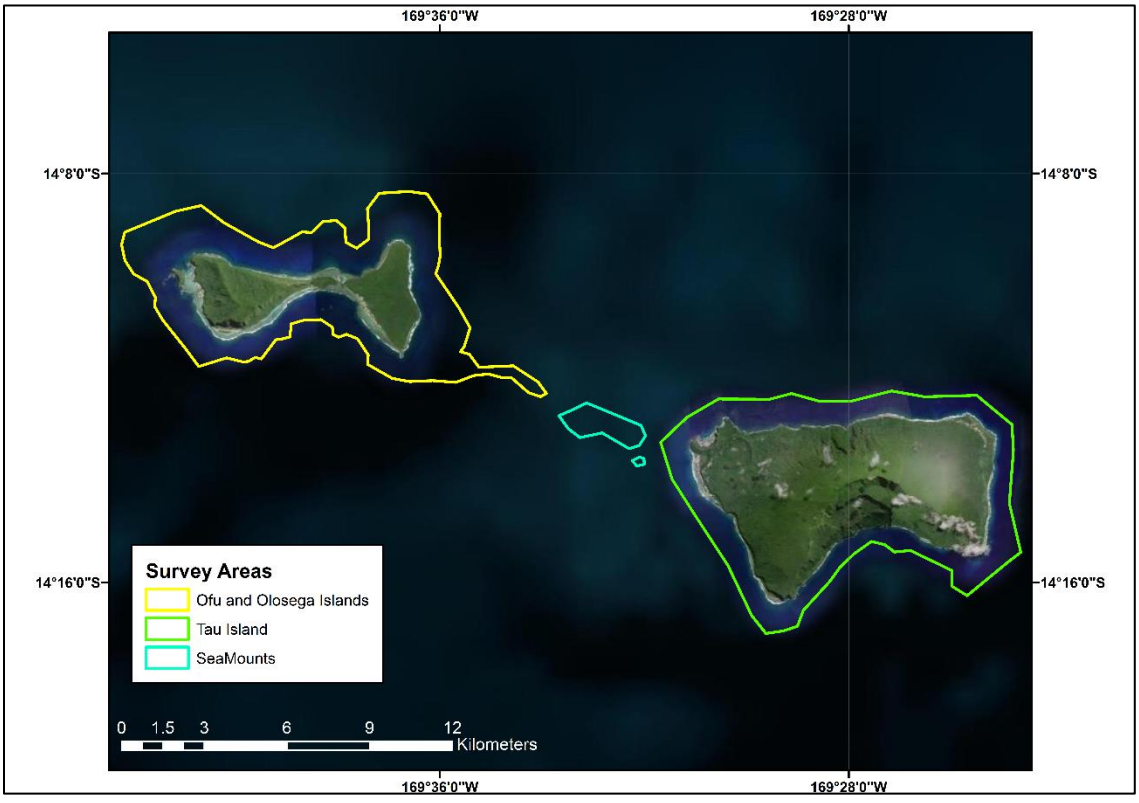

Figure 4. Islands of Ofu, Olosega, and Tau

2. Lidar Data Acquisition

All lidar data was acquired using a Chiroptera 4X (CH4X) sensor, with an additional Leica 40 kHz deep bathymetric channel. The combination of these sensors is referred to as a Leica HawkEye 4X (HE4X) system. The CH4X sensor was mounted in a Leica PAV100 gyro-stabilized mount integrated with a NovAtel SPAN GNSS and LCI-100C IMU. The deep channel sensor head was mounted over a second hatch, with an additional IMU. Real time navigation and GNSS/IMU data logging was provided by Leica FlightPro software. Lidar data was logged on the Airborne Hydrography, AB (AHAB) operator console.

The sensor was installed to the aircraft at Guam International Airport (PGUM) prior to the project. A full calibration flight was collected over the Vava'u International Airport (VAV) on October 12th, 2022, prior to mobilization to Tafuna for survey operations. The collection of the project data was acquired over 36 flights from October 12, 2022, to December 12, 2022.

2.1 Mobilization

The HE4X sensor was installed in a Reims-Cessna 406 (ZK-XLF) owned and operated by Kiwi Air (**Figure 5**).

Figure 5. Mobilized Aircraft ZK-XLF

2.1.1 Aircraft Offset Survey

Physical mounting offsets between the GNSS antenna, IMU, and gyro-stabilized mount were determined through a combination of manual measurements and iterative processing in NovAtel Inertial Explorer software.

Manual measurements were taken from the GNSS antenna to the reference point on the CH4X sensor and the deep channel sensor head. These measurements were combined with the known offsets between the reference point, IMU, and in the case of the CH4X sensor head, the rotation center of the gyro-stabilized mount. This preliminary value was then used to seed the post-processing software which, through an iterative computation, used the dynamic accelerations and rotations during flight to refine the offsets. Once the solution converged, the final offsets were entered into the flight management software and used in subsequent post-processing of the GNSS/IMU data for final trajectories.

Final offsets, shown in the Leica reference frame, are presented in **Table 2**.

Table 2. Aircraft Offsets

Sensor Head	Lever Arm	X (forward)	Y (right)	Z (down)
CH4X (Topographic and Shallow Channel)	Reference to GNSS Antenna L1 Phase Center	-0.054 m	0.602 m	0.938 m
	Reference to IMU	-0.003 m	-0.006 m	-0.296 m
	Reference to IMU Rotation	0 °	180 °	0 °
Deep Channel	IMU to GNSS Antenna L1 Phase Center	-0.134 m	1.234 m	-0.825 m
	Reference to IMU Rotation	-90°	0°	180°

2.1.2 System Calibration Checks

Field calibration of the HE4X system was carried out to eliminate systematic errors by calculating corrections for boresight errors, scanner angle errors, remaining IMU angle errors, and any necessary internal timing errors. To verify or compute the field calibration, the lines shown in **Figure 6** were flown.

a. 2 x Line A over mixed terrain with flat or gentle slopes and features such as peaked roof buildings (1 x each direction)
b. 1 x Line B offset + 50% from Line A in one direction
c. 1 x Line C offset - 50% from Line A in the same direction as Line B
d. 2 x Line D orthogonal to previous lines (1 x each direction)

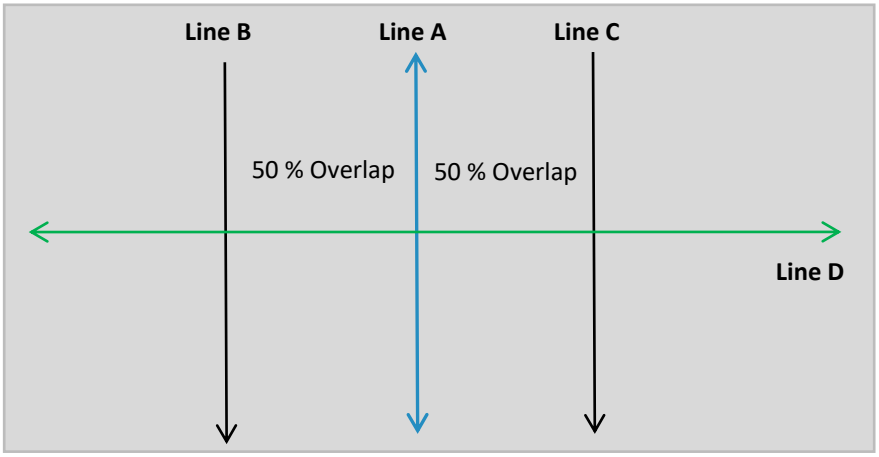

Figure 6. Schematic of HE4X Calibration Lines

A set of calibration lines were acquired at 600 m, 500 m, and 400 m altitude. All sets of lines were used to calibrate and verify the topographic lidar, while the 500 m and 400 m lines were used for the bathymetric lidar.

Calibration values were calculated using the automatic calibration routine within the Leica Lidar Survey Studio (LSS) software. This utility first identified patches or areas of gentle slope within the overlap region of all the lines to use for calibration. Patch selection prevented areas of vegetation, side of cars, or buildings from being used in the calibration process. Next, the utility compared the front side and back side of the elliptical scan within the same line, as well as comparing all lines to each other, to identify suitable calibration parameters such that data within the patches match. The procedure was iterative and continued until the best possible solution is computed.

Calibration for each channel (topographic, shallow, and deep) was done independently. Topographic channel calibration was computed using the 500 m altitude lines. The 600 m and 400 m lines were then used for verification. Calibration of the shallow channel and deep channel were computed using 500 m altitude data. Any lower altitude data was used for verification.

At each step of the calibration process, quality assurance was conducted to ensure values being calculated were valid. This was done using the Leica LSS Quality Control Utility. Two types of checks were performed. First, the front scan was compared to the back scan for every line. Next, a single line was chosen as a baseline and was compared to every other line. As expected, the average errors from both of these checks were small. Additionally, the data was visually reviewed. In particular, features were studied to ensure lines from different directions show structures in the same position, verifying horizontal accuracy was maintained. These tests all provided assurance of relative accuracy.

Results from the calibration verification checks are provided in following **Table 3**. Results are good and indicate that calibration was successful. Calibration values computed were used for the entire project.

Table 3. Calibration QA Results

Test		Topographic 600 m	Topographic 500 m	Topographic 400 m	Shallow 500 m	Shallow 400 m	Deep 500 m	Deep 400 m
Front to Back Scan Comparison	Average Error (m)	-0.0022	0.0007	0.0017	0.0007	-0.0036	0.0014	0.0049
	Std. Dev. of Error	0.0006	0.0009	0.0011	0.0010	0.0006	0.0026	0.0042
Line to Line Comparison	Average Error (m)	-0.0002	0.0069	-0.0040	0.0069	-0.0049	0.0019	0.0006
	Std. Dev. of Error	0.0037	0.0016	0.0009	0.0013	0.0017	0.0100	0.0056

Woolpert acquired a detailed set of ground truth data over the apron at the Vava'u International Airport. The ground truth was acquired using Trimble R10 GNSS receivers, Real Time Kinematic (RTK) and Post-Processed Kinematic (PPK) survey techniques.

Ground truth is not used within the automatic calibration routine. However, a comparison to the lidar data was used to verify absolute accuracy. Results presented in **Table 4** show data is well within required accuracy specifications.

Table 4. Calibration Ground Truth Comparisons

	Topographic	Shallow	Deep
Average dZ (m)	0.0008	0.0042	0.0016
Root Mean Square (m)	0.0129	0.0119	0.0102

2.2 Survey Operations

For ease of operations and data management, the survey area was split into survey blocks. Actual flight lines flown, including start and end date and unique line ID, are provided in the trajectory database included with the project deliverables in SHP format.

A summary of the daily operations is shown in **Table 5**. Detailed Flight Logs for each day are provided in **8.1 Flight Logs**. The whole collection was based out of the Pago Pago International Airport.

Thirty-Three cross lines were acquired across the areas of interest during the survey for quality purposes. Crosslines were planned perpendicular to main scheme survey lines and used to verify the relative accuracy of the data where bottom coverage allowed.

Table 5. Summary of Daily Operations

Flight	Engine Time	Airtime	Flown km | %		Reflown km | %		Comments
2022-10-18A	6:04:00	5:13:00	548.91	12.7%	16.25	0.4%	Tutuila
2022-10-19A	6:05:00	5:36:00	6.86	0.2%	9.35	0.2%	Tutuila
2022-10-19B	6:05:00	5:36:00	533.19	12.4%			Tutuila
2022-10-20A	6:00:00	5:34:00	669.38	15.5%			Tutuila
2022-10-21A	5:54:00	5:28:00	200.54	4.7%	44.54	1.0%	Rose, Sea Mounts, Tau
2022-10-22A	2:26:00	1:57:00	71.04	1.6%	24.4	0.6%	Ofu Olosega, Tau
2022-10-28A	3:58:00	3:23:00	156.37	3.6%	62.08	1.4%	Tutuila
2022-10-29A	3:32:00	3:01:00	46.86	1.1%			Swains
2022-10-29B	2:15:00	1:49:00	175.32	4.1%	1.93	0.0%	Tutuila
2022-10-30A	3:38:00	2:51:00	136.87	3.2%	24.03	0.6%	Ofu Olosega, Tau
2022-11-01A	5:37:00	5:02:00	193.28	4.5%	10.18	0.2%	Ofu Olosega
2022-11-02A	2:25:00	1:54:00	40.65	0.9%			Ofu Olosega, Tau
2022-11-03A	3:36:00	2:59:00	67.81	1.6%	18.05	0.4%	Tutuila
2022-11-05A	3:19:00	2:53:00	69.01	1.6%	9.82	0.2%	Tutuila
2022-11-09A	3:08:00	2:43:00	56.21	1.3%	7.56	0.2%	Tau
2022-11-10A	5:43:00	5:04:00	201.43	4.7%			Tutuila
2022-11-11A	2:53:00	2:27:00	152.36	3.8%			Tutuila
2022-11-12b	4:11:00	3:34:00	72.1	1.7%	12.26	0.3%	Ofu Olosega, Tau
2022-11-12A	4:27:00	4:03:00	97.87	2.3%			Tutuila
2022-11-13A	2:18:00	1:57:00	56.84	1.3%	17.14	0.4%	Tutuila
2022-11-13B	3:06:00	2:41:00	33.95	0.8%	15.64	0.4%	Ofu Olosega
2022-11-18A	1:30:00	1:02:00	6.79	0.2%	105.63	2.5%	Tutuila
2022-11-21A	1:11:00	0:45:00	5.29	0.1%	22.17	0.5%	Tutuila
2022-11-22A	2:50:00	2:26:00	144.51	3.4%	1.22	0.0%	Tutuila

Flight	Engine Time	Airtime	Flown km | %		Reflown km | %		Comments
2022-11-25A	1:32:00	1:07:00	85.92	2.0%	15.34	0.4%	Tutuila
2022-11-29A	1:21:00	0:42:00	5.43	0.2%			Tutuila
2022-11-30A	3:02:00	2:26:00	101.42	2.4%	18.46	0.4%	Tutuila
2022-12-02b	4:27:00	3:50:00	160.81	3.7%	79.36	1.8%	Tutuila
2022-12-02A	3:11:00	2:52:00	105.77	2.5%	76.29	1.8%	Tutuila
2022-12-02B	5:33:00	5:06:00	157.41	3.7%	12.38	0.3%	Ofu Olosega, Tau
2022-12-05A	1:43:00	1:18:00	52	1.4%			Tutuila
2022-12-06A	1:36:00	1:12:00	48.8	1.1%	42.49	1.0%	Tutuila
2022-12-08B	4:46:00	4:02:00	282.61	6.6%			Tutuila
2022-12-10A	3:16:00	2:33:00	52.01	1.2%	6.25	0.1%	Tutuila
2022-12-12A	2:19:00	1:42:00	44.84	1.0%	2.36	0.1%	Tutuila

2.2.1 The HawkEye 4X

All lidar data was acquired using a HE4X sensor. The system provides denser data than previous traditional bathymetric lidar systems. It is unique in its ability to acquire bathymetric lidar, topographic lidar, and 4-band digital camera imagery simultaneously.

The HE4X provided 500 kHz topographic data, an effective 140 kHz shallow bathymetric data, and 40 kHz deep bathymetric data. 4-band 80 MP digital camera imagery was also collected simultaneously with the sensor's RCD-30 camera.

The bathymetric and topographic lasers are independent and do not share an optical chain or receivers, so they are optimized for their specific function. As with any bathymetric lidar, maximum depth penetration is a function of water clarity and seabed reflectivity. The HE4X is designed to penetrate to 3 times the secchi depth. This is also represented as Dmax = 4/K, where K is the diffuse attenuation coefficient, and assuming K is between 0.1 and 0.3, a normal sea state and 15% seabed reflectance.

Both the topographic and bathymetric sub-systems use a palmer scanner to produce an elliptical scan pattern of laser points with a degree of incidence ranging from ± 14° (front and back) to ± 20° (sides), providing a 40° field of view. This has the benefit of providing multiple look angles on a single pass and helps to eliminate shadowing effects. This can be of particular use in urban areas, where all sides of a building are illuminated, or for bathymetric features such as the sides of narrow water channels or features on the seafloor, such as smaller objects and wrecks. It also assists with penetration in the surf zone where the back scan passes the same ground location a couple of seconds after the front scan, allowing the areas of whitewater to shift.

The bathymetric laser is a diode pumped class 4 laser which operates in the green spectrum. Full waveform data is acquired for every pulse. The topographic laser operates in the infra-red spectrum at 1064 nm. Up to 4 returns per pulse are acquired from each lidar.

For this project, the flight parameters shown in **Table 6** were used to provide 100% coverage. Flight parameters used exceed the requirements for the survey to meet IHO Order 2b.

Table 6. HE4X Survey Flight Parameters

	Topographic-Bathy Flight Lines	Topographic Only Flight Lines
Topographic PRF (kHz)	300	440
Topographic Points per m^2	>12	>10
Shallow Bathy PRF (kHz)	300	
Shallow Bathy Points per m^2	5.6	7.2
Deep Bathy PRF (kHz)	40	N/A
Deep Bathy Points per m^2	1.3	N/A
Swath Width (m)	290	450
Flight Line Sidelap (%)	20	
Altitude (m)	400	620
Survey Speed (knots)	125	

During acquisition, flight lines were shown on a pilot's display, and the aircraft was controlled by the pilot at all times. The HE4X system includes a NovAtel SPAN GNSS system with an LCI-100C IMU for aircraft position and orientation. One IMU is in the main Chiroptera sensor head, which includes the topographic channel, shallow channel, and RCD30 camera. Data from this IMU is also used in real-time by the PAV100 gyro-stabilized mount to compensate for deviations in pitch and roll.

A second IMU is contained within the deep channel sensor head, installed over a second hatch in the aircraft. This head does not include a gyro-stabilized mount. Aircraft bank angles were restricted to 25° to avoid any potential GNSS dropouts. No flights were planned if the PDOP was expected to go above 3.0.

Data were monitored for quality during acquisition using the Operators Console running on the AHAB collection computer. The operator monitored the system status of the scanners and receivers, waveforms, camera images, data coverage, flight lines and the health of the navigation system.

All data was recorded to a removable solid-state hard disk. At the end of each flight, the hard disk was removed and taken to the field office, where data was copied onto backup disks for transmission back to the main processing office. Preliminary data was reviewed daily in the field for quality and coverage.

2.2.2 Positioning

Position and orientation data was acquired in the aircraft using a NovAtel SPAN with LCI-100C IMU. All data was post-processed using NovAtel Inertial Explorer software to provide a tightly coupled position and orientation trajectory solution.

Project area Tutuila were processed using single-base Post Processed Kinematic (PPK) techniques. GNSS base stations were set up at base operations Pago Pago International Airport. The data collected from GNSS base stations provided the reference station data used to control trajectory processing.

Final coordinates for PAG1 and PAG2 were uploaded and computed by Trimble's RTX Post-Processing services, with daily results averaged to finalize the coordinates.

Table 7. GNSS Base Summary

GNSS Base Station	Latitude	Longitude	Height (m)	Datum
PAG1	14° 19' 43.91679" S	170° 42' 54.46751" W	36.162	ITRF2014 (Epoch 2022.80)
PAG2	14° 19' 43.40828" S	170° 42' 53.05879" W	37.814	ITRF2014 (Epoch 2022.86)

Rose Atoll; Swains Island; Ofu and Olosega; and Tau Island data were acquired using Precise Point Positioning (PPP) techniques. Logs for the base station and trajectory processing are provided in **Section 8.2**.

3. Ground Survey Operations

Ground control surveys were conducted to assist with final point cloud calibration and to perform quality assurance checks on the final lidar point cloud.

3.1 Primary Control Points

Woolpert used local GNSS base stations and Precise Positioning Processing techniques to conduct final trajectory processing as described in **Section 2.2.2.**

3.2 Lidar Survey Points

Woolpert established three-dimensional coordinates for 12 Topographic Lidar control points, 9 Bathymetric Lidar check points, 10 vegetated check points, and 20 non-vegetated check points. The points were collected per the flight layout and were uniformly dispersed over the project areas. Further discussion of the processing results is presented in **Section 5.4.3**.

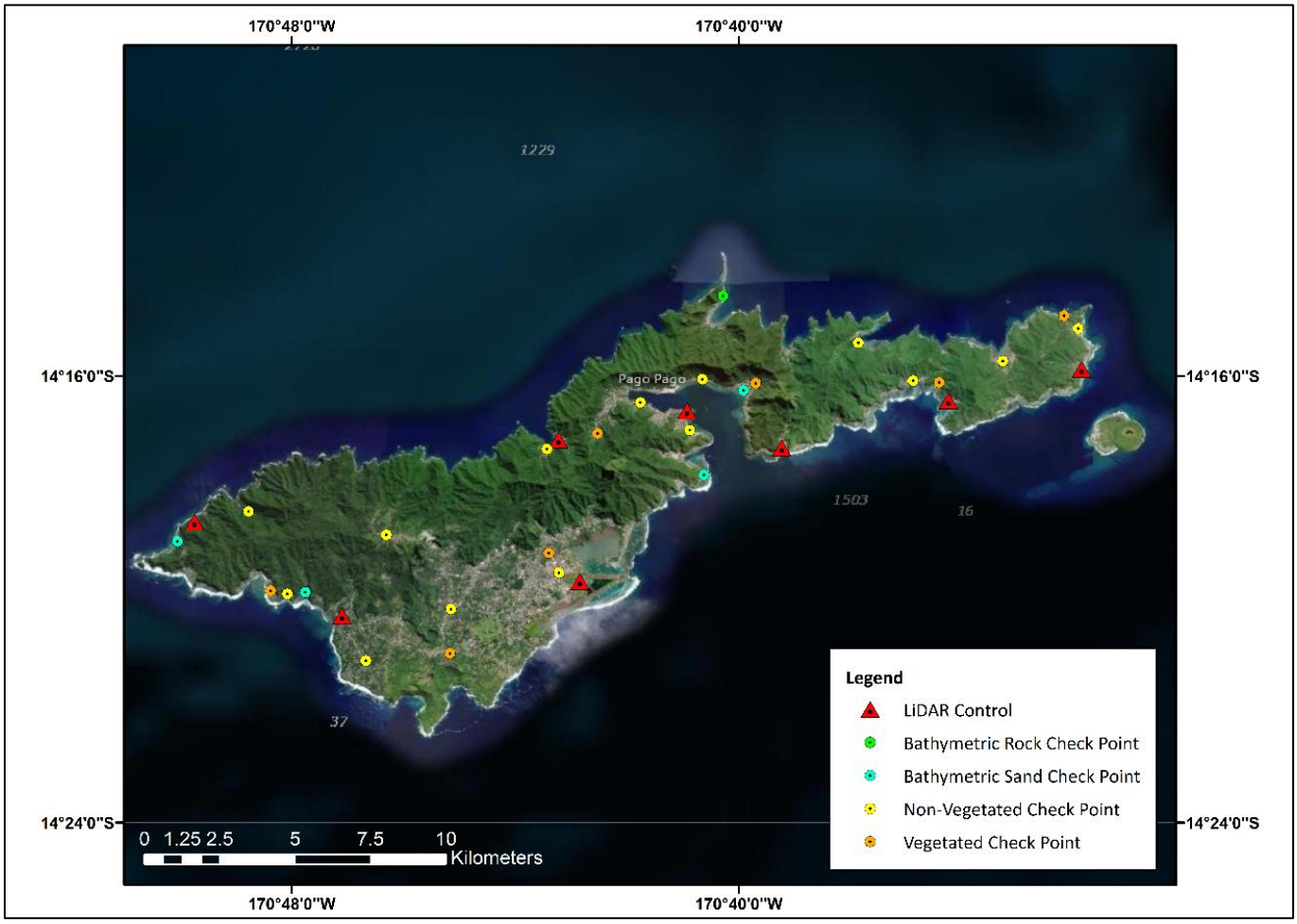

Figure 7. Tutuila Ground Survey Overview

Figure 8. Ofu and Olosega, and Tau Island Ground Survey Overview

3.3 Lidar Ground Check Points (RTK)

For quality control purposes, a daily QC flight line was acquired over the same location every day at the Pago Pago International Airport.

Topographic control point data were collected with a Trimble R-10 GNSS receiver using RTK GNSS techniques over the area covered by the daily lidar QC line. Further discussion of the processing and results is presented in **Section 5.4.3**.

Figure 9. Daily QC Line Ground Survey

4. Data Processing

Initial data coverage analysis and quality checks to ensure there were no potential system issues were carried out in the field and office prior to final demobilization of the sensor. Final processing was conducted in Woolpert's offices.

In general, data were initially processed in Leica's Lidar Survey Studio (LSS) using final processed trajectory information. LAS files from LSS were then imported to a TerraScan project, where spatial algorithms were used to remove gross noise. Manual review and further QC were conducted in TerraScan prior to product creation.

4.1 Position

Final trajectory data were post processed in NovAtel Inertial Explorer. Lever arms, shown in the NovAtel reference frame, are presented in **Table 2**. Inertial Explorer accounts for the fixed offset between the reference point and IMU and uses a multi-pass algorithm to compute a tightly coupled solution. Trajectory processing logs are provided in **Section 8.2**. Average Forward and Reverse Separation RMS for the project was 0.017 m in Easting and Northing, and 0.046 m in Height.

Project Datum are provided in **Table 8**.

Table 8. Project Spatial Reference Systems

	Processing Datum	Deliverable Datum
Name	**ITRF14- UTM 2S & Ellipsoid Heights**	**NAD83(PA11)- UTM 2S & Ellipsoid Heights**
Project Use	Acquisition and Data Processing	Product Delivery
Horizontal Datum	ITRF14 (Current Epoch) Equivalent to WGS84	NAD83(PA11) UTM Zone 2S epoch:2010
Horizontal Projection	UTM Zone 2S	NAD83(2011) epoch:2010 Ellipsoid, meters
Horizontal Units	Meters	Meters
Vertical Datum	Ellipsoid	Ellipsoid
Vertical Units	Meters	Meters

4.2 Imagery

Imagery was acquired simultaneously with the lidar data using the HE4X system. The system includes an RCD30 80MP 4-band RGBN camera, providing raw 16-bit radiometrically-corrected and normalized imagery.

4.2.1 Image Calibration

Field calibration of the RCD30 camera was carried out to eliminate systematic errors by calculating corrections for the principal point offset and misalignment angles (Omega, Phi Kappa). Misalignment angles were essentially the mechanical misalignment of the IMU and the camera sensor axes.

Leica's IPAS CO+ was used to finalize the camera calibration. It uses orthogonal lines flown in both directions over an area containing buildings and features, such as painted lines. In this case, orthogonal lines A and D (**Figure 6**) from the calibration flight were used.

IPAS CO+ has an automated point matching (APM) feature that identifies the same point in overlapping images and automatically iterates to compute final misalignment and principal point offset (PPO) parameters, which are provided in **Table 9**.

Table 9. RCD30 Camera Misalignment and PPP Parameters

Parameter	X	Y	Z
Lever Arms (m)	0.000	-0.115	0.166
Rotation (deg)	0	0	90
Misalignment (deg)	-0.094654	0.024231	0.000445
PPO (mm)	0.0488	0.0023	N/A

4.2.2 Image Processing

Imagery data collected with the RCD30 camera were extracted from the raw compressed airborne format to 8-bit 4-band (RGBN) images using Leica's HxMAP software. 8-bit processed data were used to manage data volumes, without significant reduction in data quality. Individual images were rectified by HxMAP using a 1m resolution Digital Elevation Model (DEM) created from the lidar data.

Rectification was accomplished using direct georeferencing (making use of the final post-processed aircraft trajectory, along with the camera interior and exterior orientation information) without use of any Aerial Triangulation (AT) and ground control.

All individual rectified images for an area were used in Trimble's OrthoVista software to create the final 0.10m resolution 4-band tiled GeoTIFF image mosaics. The GeoTIFF images were converted to 3-band ECW images for editing purposes.

4.3 Lidar

4.3.1 Raw Data Processing

Lidar processing was conducted using the Leica Lidar Survey Studio (LSS) software. Calibration information, along with processed trajectory information were combined with the raw laser data to create an accurately georeferenced lidar point cloud for the entire survey in LAS v1.4 format. All points from the topographic and bathymetric laser include 16-bit intensity values.

During the LSS processing stage, an automatic land/water discrimination was made for the bathymetric waveforms. This allowed the bathymetric (green) pulses over water to be automatically refracted for the pulse hitting the water surface and travelling through the water column, producing the correct depth. Another advantage of the automatic land/water discrimination was that it permitted calculation of an accurate water surface over smaller areas, allowing simple bathymetric processing of smaller, narrower streams and drainage channels. Sloping water surfaces were also handled correctly.

Prior to processing, the hydrographer adjusted waveform sensitivity settings dependent on the environment encountered and entered a value for the refraction index to be used for bathymetry. The index of refraction was an indication of the water type. Values used for sensitivity settings and the index of refraction are included in the LSS processing settings files. A value of 1.342200 was used for the index of refraction, indicating salt water.

In order to determine the optimal waveform sensitivity settings for final processing, sample areas were selected and processed with multiple different settings, to iteratively converge on the best possible settings. This was done by reviewing the processed point cloud and waveforms within sample areas. A sample waveform is provided in **Figure 10**. Settings affected which waveform peaks were classified as valid seabed, and which peaks were classified as noise.

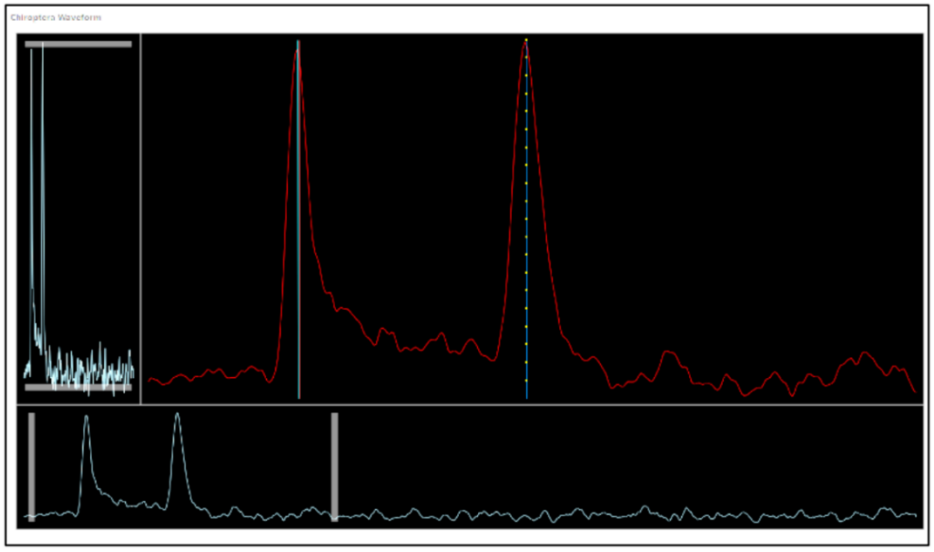

Figure 10. Sample Waveform in Shallow Water

Optimal settings struck a balance between the amount of valid data that was classified as seabed bottom, and the amount of noise that was incorrectly classified due to peaks in the waveforms. All valid data was selected, while only a small amount of noise remained to be edited out. Once optimal threshold settings were chosen, they were used for the entire project.

It is important to note that all digitized waveform peaks were available to be reviewed by the hydrographer; both valid seabed bottom and peaks classed as noise. This allowed the hydrographer to review data during TerraScan editing for valid data such as objects that may have been misclassified as noise.

Woolpert developed proprietary routines implemented in our in-house GTools software to run further checks on the lidar data prior to import to Terrascan project tiles. These checks automatically identified areas where Multiple Pulse in Air (MPIA) errors occurred, as well as invalid derived water surface data, and deleted the erroneous data from the dataset. In addition, GTools merged the multiple small files per flight line generated by LSS into a single LAS file per flight line. Data in each LAS file was also classed into a standard LAS class structure in preparation for data editing.

4.3.2 Lidar Data Classification/Editing

After data were processed through LSS and the data integrity reviewed, data were organized into tiles within a TerraScan project. Data classification and spatial algorithms were applied in Terrasolid's TerraScan software. Customized spatial algorithms, such as isolated points and low point filters, were run to remove gross fliers in the bathymetric and topographic data.

All data were reviewed manually to reclassify any valid bathy points incorrectly identified by the automated routines in LSS as invalid, and vice versa. In addition, any topographic points remaining over the water were reclassified to a Topographic Water class to correct the ground representation. Manual editing was conducted in TerraScan. Product grids and TIN models were used at the required product resolution to assist in data editing and QC results. Steps conducted during the manual editing phase included:

- Removing noise from the unclassified topographic class to leave only valid data (e.g., vegetation, buildings, real temporary objects in the environment such as cars, people, etc.);
- Removing any topographic unclassified, topographic ground, and valid seabed class data from the water surface to a water surface class, including along the shoreline;
- Filling gaps in the topographic ground and seabed classes, including potential objects such as rocks on the coast; and
- Removing any remaining noise from the topographic ground and seabed classes.

4.3.3 Reflectance

Once all lidar data were edited, final seabed class data were used to compute project specific correction parameters and normalize the raw intensity data for depth. Corrected values were then written back into the LAS files.

Although the bathymetric data includes intensity values, these are raw values. For intensity (reflectance) to correctly represent the reflectance of the seabed, the intensities must be normalized for any losses in signal as the light travels through the water column, so that the intensity value better reflects the intensity of the seabed itself.

One of the fundamental issues that exists with reflectance imagery is the variance in return due to water clarity differences occurring spatially along line, and temporally from day to day. This is challenging for any bathymetric lidar sensor.

If water clarity is relatively consistent along a line, then it is possible to achieve an overall homogenous reflectance image for an area. To a certain extent, variation in reflectivity intensity can be minimized by limiting the size of flight blocks and trying to ensure similar environmental parameters exist within a single flight block. In other words, where changes in water clarity or environment may be expected, flight blocks should be split to allow different normalization parameters to be used per block for the reflectance processing. Where this is not possible and water clarity varies significantly along a line, variation in reflective intensity will be seen in the output imagery. While this imagery can still be analyzed and used for manual seabed classification, it prohibits the use of unsupervised, or semiautomated classification.

Woolpert used proprietary in-house scripts to compute project specific correction parameters and normalize the raw intensity data for depth. This provided intensities that more closely represent the reflectance of the actual seabed. Corrected values were used to create reflectance images per flight line using Applied Imagery's QT Modeler software. Individual flight line reflectance images were then used in Trimble's OrthoVista software to create a final reflectance image for the entire area.

OrthoVista was used to improve radiometric balancing between lines and the seamline editor was used to improve the joins between lines to remove as much line-to-line edge matching and cloud artifact issues as possible. As well as delivering the reflectance raster mosaics themselves, the processed reflectance data was used to correct the intensity values within the LAS files for delivery.

4.3.4 Lidar Datum Conversions

All editing was conducted with the lidar data elevations on the ellipsoid. Once editing was completed, data were transformed from ITRF14 (Current Epoch) to NAD83(PA11) UTM Zone 2S epoch:2010 using Geographic Calculator 2023.

TerraScan was then used to compare the lidar data to known ground control points. For each known location, a small TIN was created from the surrounding lidar points, and the elevation difference from the TIN plane to the point computed.

5. Quality Control

Quality control was carried out through every phase of the project. Several checks were used to ensure data integrity and quality was maintained. Specific statistics were generated during cross line analysis and from direct comparison to topographic control.

5.1 Calibration

Calibration, which is fundamental to ensuring good data accuracy, is discussed in detail in **Section 2.1.2**.

5.2 Online Checks

The airborne operator monitored the system status of the scanners and receivers, waveforms, data coverage, flight lines, and navigation system during data acquisition. Flight logs were maintained during data acquisition. Logs not only tracked lines acquired, but also any relevant information on weather or water clarity, instances when sensor issues occurred, and so on. These logs were a valuable resource during processing. Flight logs are provided in **Section 8.1**.

5.3 Positioning

During acquisition, aircraft bank angles were restricted to 25 degrees to avoid any potential GNSS dropouts. No flights were planned if the PDOP was expected to go above 3.0. Position processing and results are discussed in **Section 2.2.2** .

5.4 Accuracy Checks

5.4.1 Comparison to Adjacent Lines (Relative Accuracy)

Throughout data editing, adjacent survey lines of data were compared to ensure there were no data busts or system artifacts. During processing, TerraSolid's TMatch software was run to examine the Delta Z differences between overlapping lines, then a simple Z correction was applied per flight line to remove any vertical differences between flight lines. Using TMatch to move all the lines into the same relative plane reduced any remaining small differences caused by the limitations of the trajectory accuracy.

Woolpert's in-house software, GTools, was used to generate dZ grids representing flight line to flight line differences in areas of overlap. Any results within areas of slope greater than 10 degrees were removed, and final dZ statistics generated for the project. This provided a measure of inter-swath accuracy.

Interswath or overlap consistency for the topographic laser was assessed in all areas of overlap with slopes of less than 10 degrees. The topographic RMSDz average for the project is 0.040 m. This meets the required accuracy of ± 8 cm.

Interswath or overlap consistency for the bathymetric laser was assessed in all areas of overlap with slopes of less than 10 degrees. The bathymetric RMSDz average for the project lines is 0.106 m. This meets the required accuracy of ± 29.6 cm.

Results for each survey area are presented in **Table 10**.

Table 10. Line to Line Relative Accuracy

Area	Topographic Laser RMSDz (m)	Bathymetric Laser RMSDz (m)
Ofu and Olosega	0.057	0.124
Rose Atoll	0.022	0.050
Sea Mounts	N/A	0.160
Swains	0.019	0.041
Tau	0.063	0.128
Tutuila	0.039	0.133
Average	**0.040**	**0.106**

5.4.2 Cross Line Analyses

Cross lines were run in a direction perpendicular to main scheme lines across the entire survey area, providing a good representation for analysis of consistency. All cross lines were used for cross line comparisons. Cross line analysis was performed using the Fledermaus CrossCheck tool. Cross line point data were compared to a 2 m gridded surface of the main scheme survey lines and statistics generated. For each line, a histogram of the point comparison was reviewed in CrossCheck to ensure there was a normal distribution of data. A summary of the CrossCheck results is provided in **Table 11**. The result of the analysis meets the required IHO Order 2b depth accuracy requirements.

Table 11. Cross Line Point to Surface Results

	Ofu Olosega	Rose Atoll	Sea Mounts	Swains	Tau	Tutuila	All Areas
No. of Points Compared	7302399	3587954	4394	2306005	4457479	13105596	30763827
Mean Difference (MD) in m	0.002	0.003	0.010	-0.002	-0.008	0.001	0.001
Standard Deviation (St. Dev)	0.004	0.006	0.009	-0.003	-0.006	0.151	0.027
Mean + 2* Std. Dev	0.165	0.097	0.186	0.086	0.167	0.315	0.169

In addition, 2 m surfaces were created for the cross lines, and surface differences generated between the cross line and main scheme surfaces. Statistics for the difference surfaces were generated. Results matched those from the CrossCheck analysis, as shown in **Table 12**.

Table 12. Cross Line Surface Difference Results

	Ofu Olosega	Rose Atoll	Sea Mounts	Swains	Tau	Tutuila	All Areas
Mean Difference (MD) in m	0.010	0.000	-0.005	0.000	0.003	-0.001	**0.001**
Standard Deviation (St. Dev)	0.130	0.090	0.215	0.170	0.217	0.191	**0.169**

5.4.3 Comparison to Topographic Control

Topographic control data were acquired on the apron of the Pago Pago International Airport using RTK GNSS techniques (**Section 3.3**). This area was covered by the daily lidar QC line used to account for any potential trajectory shifts between each acquisition survey day.

5.4.3.1 Precise Point Positioning Shifts

Due to the remoteness of project areas, ground survey of Rose Atoll, Sea Mounts, and Swains Island was not possible. To account for any potential trajectory shift between each survey day for flights processed with PPP trajectories, the daily QC lines and ground survey data (**Section 3.3**) were used to remove error.

During lidar processing, any line-to-line vertical mismatches are removed. Therefore, an average PPP shift for Rose Atoll and Swains Island was computed and applied to remove any remaining errors in the ellipsoid height. Results of calculated data shifts comparing the QC lines and RTK comparison are provided in **Table 13**.

Table 13. Precise Point Positioning Shifts

	Static Shift Applied
Rose Atoll	-0.024
Sea Mounts	-0.024
Swains Island	-0.027

5.4.3.2 Primary Ellipsoidal Height Control

Ground survey was collected by Woolpert on the islands of Ofu and Olosega; Tau; and Tutuila. Once all manual reclassification was completed, data were compared to the ground control to compute an average shift value to be applied. Results are noted in **Table 14**.

Table 14. Comparison to Topo Ground Control

	Number of Control Points	Average dZ (m)	Std. Deviation
Ofu and Olosega	2	0.096	0.028
Tau Island	2	0.058	0.017
Tutuila	8	0.011	0.045

Absolute vertical accuracy for the lidar points was calculated using the acquired checks points. A summary of results is provided in **Table 15**, **Table 16**, and **Table 17**. The check points were observed in three (3) different land cover types to assess absolute vertical accuracy: vegetated (VVA), non-vegetated (NVA), and bathymetric (BVA).

Two NVA check points (2010_h and 2019) collected on the island of Tutuila were removed from analysis and identified as outliers. These check points were removed due to the observations being directly under or close to numerous power lines, which would likely affect the GPS solution.

This data set tested 0.066 meters fundamental vertical accuracy at 95th percent confidence level in open terrain using RMSE (z) x 1.9600.

Table 15. Comparison to NVA Check Points Results

	NVA Check Point Accuracy			
	Average dZ (m)	Std. Deviation	RMSE (m)	Accuracy (95% Confidence)
Ofu and Olosega	-0.013	0.047	0.040	0.078
Tau Island	0.007	0.020	0.018	0.035
Tutuila	-0.018	0.041	0.043	0.084
ALL	**-0.008**	**0.036**	**0.034**	**0.066**

Table 16. Comparison to VVA Check Points Results

	VVA Check Point Accuracy		
	Average dZ (m)	Std. Deviation	RMSE (m)
Ofu and Olosega	0.134	0.112	0.156
Tau Island	0.215	--	0.215
Tutuila	0.058	0.057	0.078
ALL	**0.136**	**0.085**	**0.150**

Table 17. Comparison to BVA Check Points Results

	BVA Check Point Accuracy		
	Average dZ (m)	Std. Deviation	RMSE (m)
Ofu and Olosega	0.241	0.06	0.244
Tau Island	0.312	0.142	0.327
Tutuila	0.100	0.175	0.185
ALL	**0.218**	**0.126**	**0.252**

The bathymetric vertical control had a higher RMSE than other vertical control categories due to the nature of where the control was established. Features on shorelines like this experience temporal changes due to the effects of tides, especially sandy areas, and the acquisition spanned 2 months along an active shoreline. **Figure 11** is an example of a control point likely to experience high variability over the collect.

Figure 11. BVA Ground Survey Point 4007

5.4.3.3 Imagery Accuracy

While this project did not have control over the calibration location suitable for horizontal accuracy, relative statistics were easily derived. Imagery collected simultaneously during the calibration survey (**Section 2.1.2**) was used to calibrate the camera head file (which contained information about the PPO and misalignment) for imagery processing, as well as to assess accuracy.

Five-centimeter ortho imagery, the finest the camera is able to produce at the chosen calibration elevation (500 m), was generated. This elevation is the highest elevation at which usable imagery was planned to be taken. Twenty easily identifiable features (paint lines, edges of concrete pads, etc.) were found in the area where three or more flight lines intersected. For each feature, the frame that had the nearest principal point was used, and the coordinates of the feature in the imagery were then noted. The differences between frames were calculated using a near analysis. Results showed good relative agreement between different frames and lines flown in different directions at the calibration altitude (**Table 18**).

Table 18. Summary of Relative Accuracy of Imagery Results

RMSE (m)	0.064
Standard Deviation (m)	0.065

6. Flight Trajectories

The flight trajectories used for the survey collection are provided in ESRI Shapefile format. The Shapefile contains the attributes, date of capture, local start time, local end time, reference station, and flight line number.

6.1 Ofu and Olosega Flight Trajectories

The island of Ofu and Olosega was surveyed between October 10, 2022, and December 3, 2022. A total of 173 flight lines were collected.

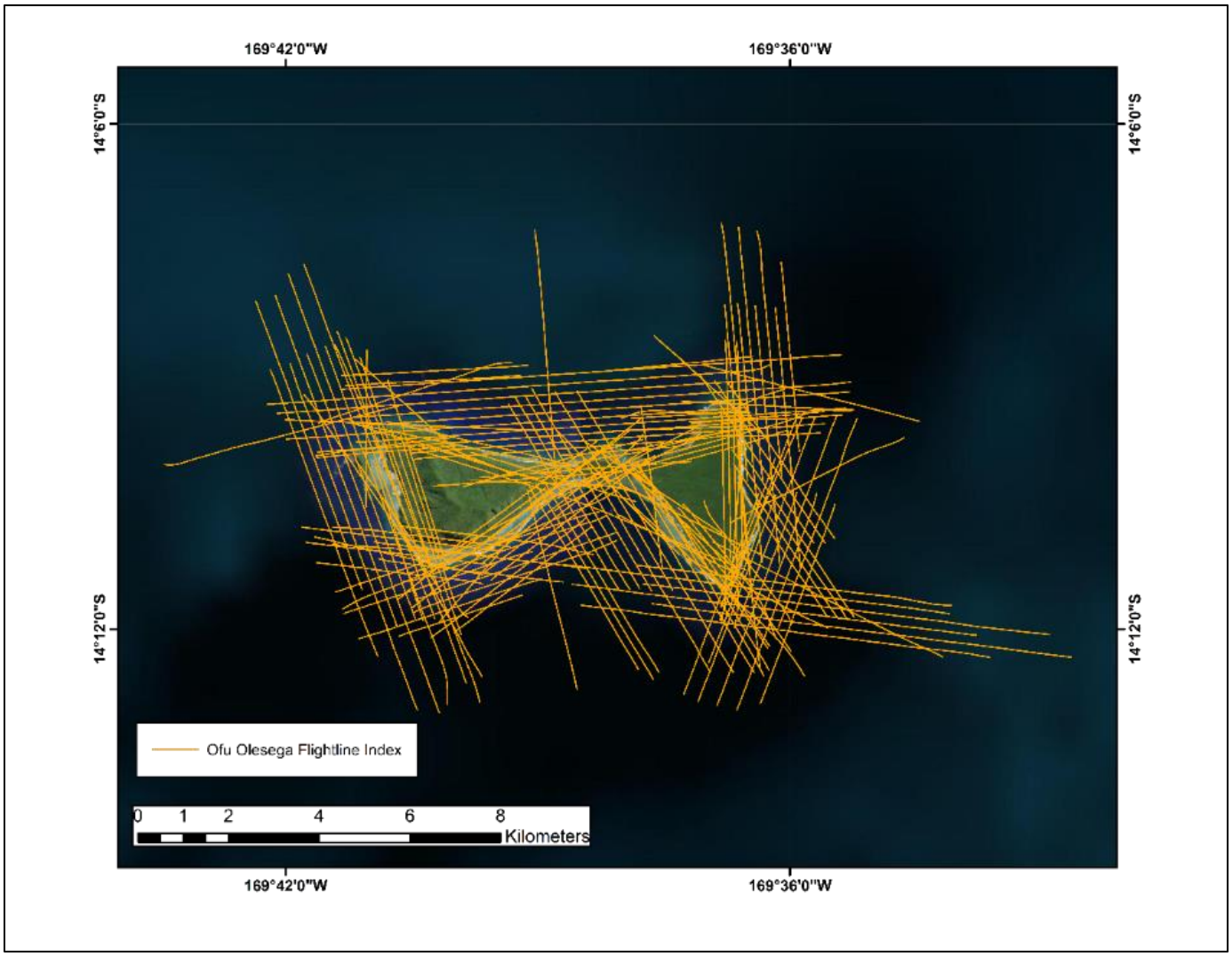

Figure 12. Ofu and Olosega Flight Trajectories

6.2 Rose Atoll Flight Trajectories

Rose Atoll was surveyed on October 12, 2022. A total of 17 flight lines were collected.

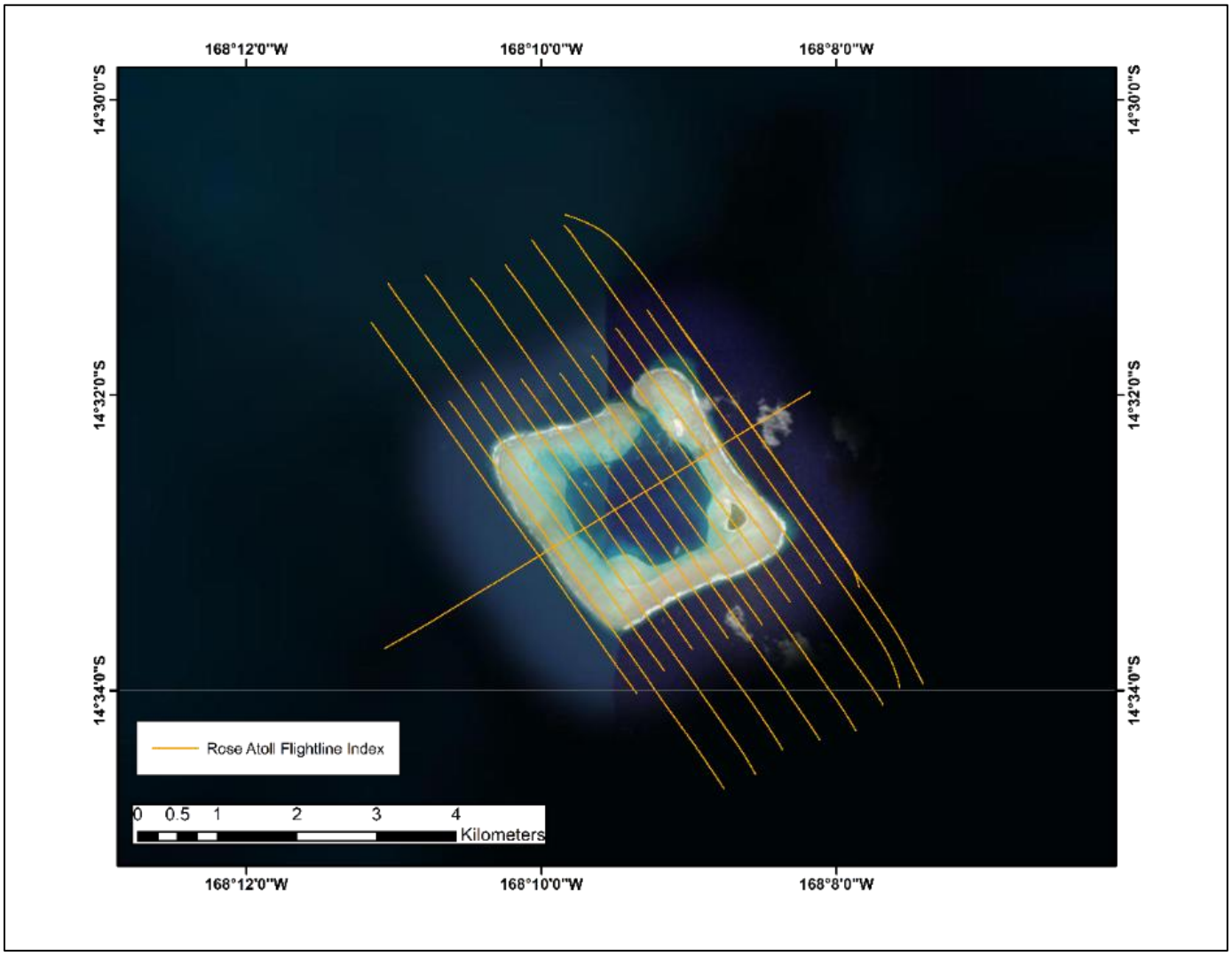

Figure 13. Rose Atoll Flight Trajectories

6.3 Sea Mounts and Tau Flight Trajectories

The Sea Mounts project area was surveyed on October 21, 2022. A total of 11 flight lines were collected.

The island of Tau was collected between October 21, 2022, and December 2, 2022. A total of 137 flight lines were collected.

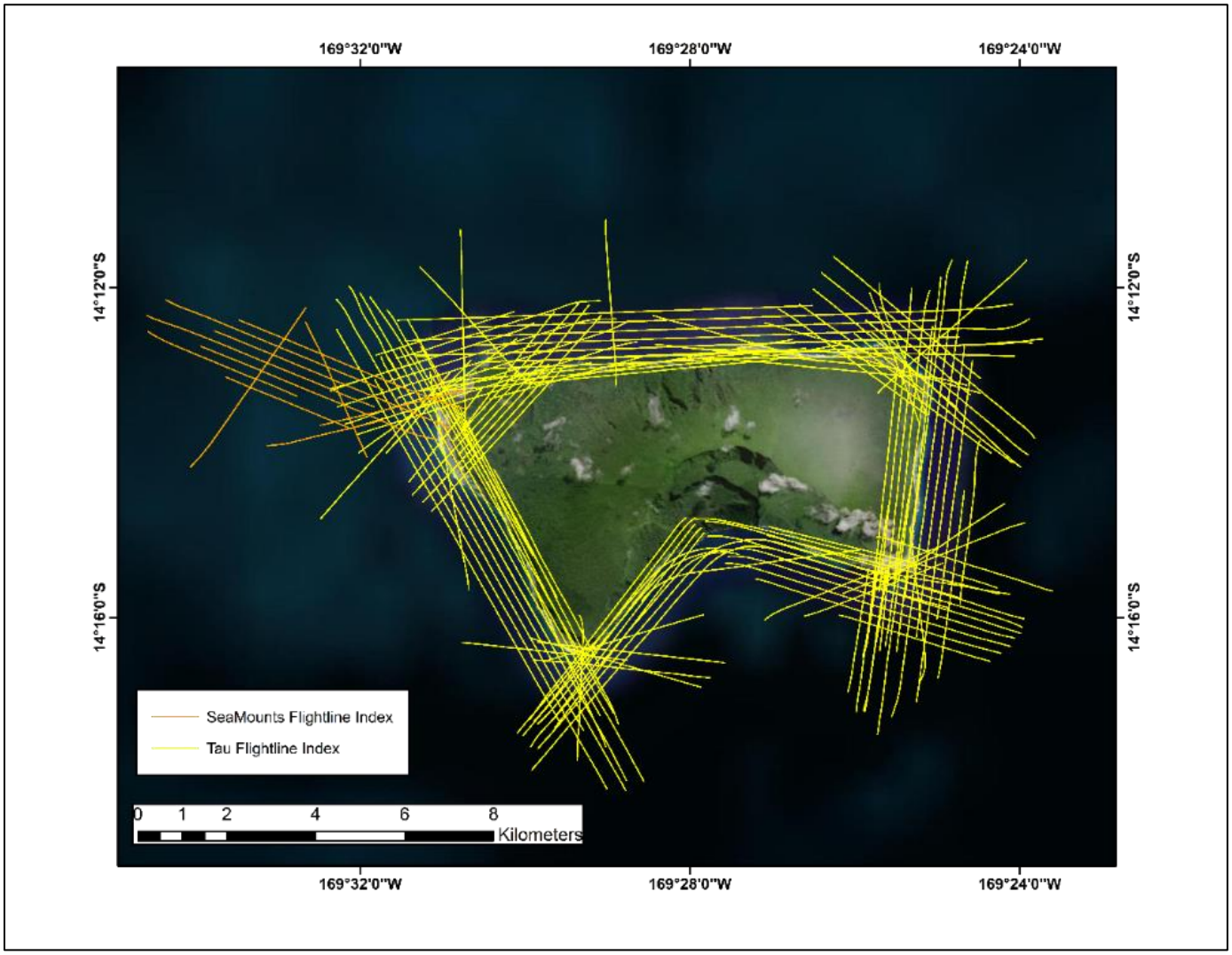

Figure 14. Sea Mounts and Tau Island Flight Trajectories

6.4 Swains Flight Trajectories

Swains Island was surveyed on October 29, 2022. A total of 14 flight lines were collected.

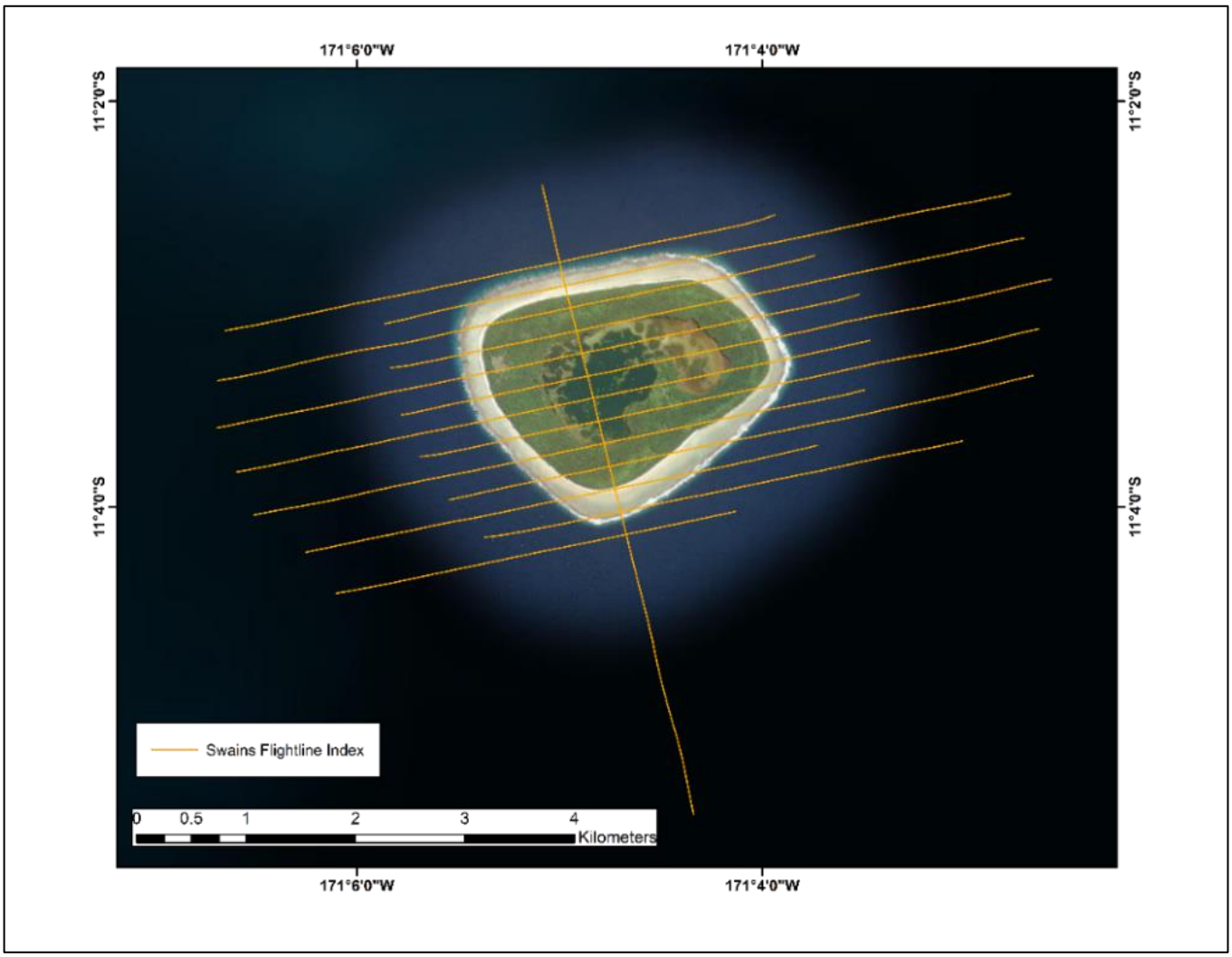

Figure 15. Swains Island Flight Trajectories

6.5 Tutuila Flight Trajectories

The island of Tutuila was surveyed between October 18, 2022, and December12, 2022. A total of 795 flight lines were collected.

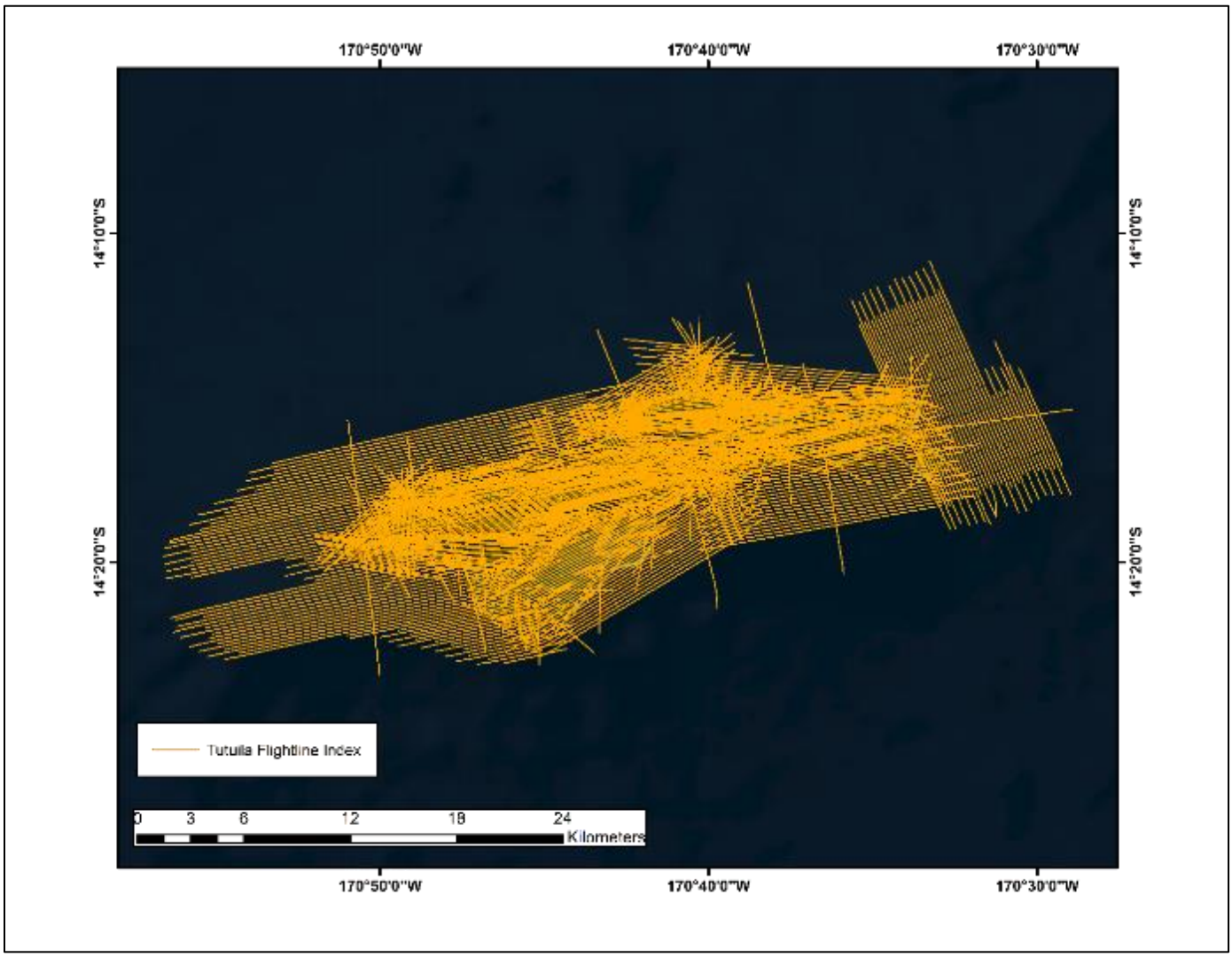

Figure 16. Tutuila Island Flight Trajectories

7. Products

Deliverables required for the project are listed in **Table 19**.

Table 19. Product Deliverable Structure

ID	Item	Deliverable	Resolution (m)	Tiled	Delivery Folder
1	Classified LAZ Point Cloud	LAZ	--	✓	AS2201-TB-C_AREA\01_LAZ
2	Topo bathy Bare Earth DEM	GeoTIFF	1.0	✓	AS2201-TB-C_AREA\02_DEM
3	TPU	GeoTIFF	1.0	✓	AS2201-TB-C_AREA\03_TPU
4	Normalized Seabed Intensity	GeoTIFF	1.0	✓	AS2201-TB-C_AREA\04_Reflectance
5	RGBN Imagery	GeoTIFF	0.10	✓	AS2201-TB-C_AREA\05_Imagery
6	Bathy Voids	ESRI Shp	--	--	AS2201-TB-C_AREA\07_SHP_GIS
7	Flightline Index	ESRI Shp	--	--	AS2201-TB-C_AREA\07_SHP_GIS
8	Tile Index DEM	ESRI Shp	--	--	AS2201-TB-C_AREA\07_SHP_GIS
9	Tile Index Imagery	ESRI Shp	--	--	AS2201-TB-C_AREA\07_SHP_GIS
10	Tile Index LAS	ESRI Shp	--	--	AS2201-TB-C_AREA\07_SHP_GIS
11	Metadata Per Product	XML	--	--	AS2201-TB-C_AREA\08_Metadata
12	Topographic dZOrtho	GeoTIFF	1.0	✓	AS2201-TB-C_AREA\09_dZOrtho\Topo
13	Bathymetric dZOrtho	GeoTIFF	1.0	✓	AS2201-TB-C_AREA\09_dZOrtho\Bathy
14	Direct Georeferenced EO Files	Txt	--	--	AS2201-TB-C_AREA\10_EO

7.1 Classified Point Cloud (LAS Files)

The LAS data coordinate reference system applied is:

- Horizontal: UTM Zone 2S, NAD83(PA11) epoch:2010, meters
- Vertical: NAD83(2011) epoch:2010 Ellipsoid, meters

Delivered LAS data are provided in Point Record Format 6 and include Adjusted GPS Time and 16-bit intensity values. LAS file classes delivered are shown in **Table 20**. Classes 2 and 40 provide the ground model for the project.

Table 20. LAS Classes

NUMBER	POINT CLASS	DESCRIPTION
1	Default	Valid unclassified data from the topographic laser
2	Ground	Bare Earth Ground
W7	Low Noise	Spurious high/low point returns (unusable)
9	Water	Water Surface (topographic sensor)
W18	High Noise	Spurious high/low noise points from the bathymetric laser over land.
40	Bathymetric Point	Submerged Topography
41	Water Surface	Water Surface, distinct from Point Class 9, which is used in topographic-only lidar and only designates “water,” not “water surface”.
S42	Derived Water Surface	Synthetic water surface location used in computing refraction at water surface
43	Submerged object	Submerged Object, not otherwise specified (e.g., wreck, rock, submerged piling).
44	IHO S-57 Object	IHO S-57 Object, not otherwise specified
64	Submerged Aquatic Vegetation	Submerged Aquatic Vegetation
65	Temporal Change	Denotes bathymetric bottom temporal changes from varying lifts, not utilized in bathymetric point class

8. Related Information

8.1 Flight Logs

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Vava'u (VAV)
LOCATION / AREA:	AmericanSamoa / 400m, 500m, 600m	**DATE:**	12 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa	**CLOUDS:**	Clear
BASE STATION:	VAV1	**WIND:**	10 kts @ 330
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-03

ENGINE START:	20:17	**ENGINE OFF:**	21:58	**ENGINE TIME:**	01:41
TAKEOFF:	20:35	**LANDING:**	21:45	**AIR TIME**	01:10

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		20:35:00					Takeoff
		20:38:51					DS: 600m_20221012_203851
000_FL3	6363	20:38:51	20:40:03	600	440	13	
001_FL4	6364	20:41:48	20:43:09	600	440	13	
002_FL2	6362	20:45:04	20:46:21	600	440	13	
003_FL1	6361	20:48:10	20:49:29	600	440	13	
004_FL5	6365	20:51:36	20:52:51	600	440	13	
005_FL6	6366	20:55:25	20:56:45	600	440	13	
		20:58:00					Completed 600m Calibration
		20:59:19					DS: 500m_20221012_205919
000_FL4	6354	20:59:19	21:00:32	480	500	13	
001_FL3	6353	21:02:36	21:03:46	480	500	13	
002_FL2	6352	21:05:34	21:06:44	480	500	13	
003_FL1	6351	21:12:38	21:13:54	480	500	13	
004_FL5	6355	21:15:57	21:17:11	480	500	13	
005_FL6	6356	21:20:24	21:21:36	480	500	13	
		21:22:00					Completed 500m Calibration
		21:24:04					DS: 400m_20221012_212404
000_FL4	6344	21:24:04	21:25:14	400	300	10	
001_FL3	6343	21:27:19	21:28:30	400	300	10	
002_FL2	6342	21:30:37	21:31:50	400	300	10	
003_FL1	6341	21:33:44	21:34:58	400	300	10	
004_FL5	6345	21:37:10	21:38:21	400	300	10	
005_FL6	6346	21:41:33	21:42:46	400	300	10	
		21:43:00					Completed 400m Calibration
		21:45:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL50, BL51, BL52, BL54, BL56, QC6	**DATE:**	18 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 90
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-05

ENGINE START:	19:00	**ENGINE OFF:**	1:04	**ENGINE TIME:**	06:04
TAKEOFF:	19:35	**LANDING:**	0:48	**AIR TIME**	05:13

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		19:35:00					Takeoff
		19:39:00					DS: QC62_20221018_193900
000_FL1	6201	19:39:00	19:40:41	400	300	11	
		19:47:38					DS: BL52_20221018_194738
000_FL3	5203	19:47:38	19:50:44	400	300	11	
001_FL4	5204	19:52:34	19:55:45	400	300	11	
002_FL12	5212	19:57:06	20:00:22	400	300	11	
		20:03:13					DS: BL54_20221018_200313
000_FL24	5424	20:03:13	20:05:16	400	300	11	
001_FL23	5423	20:07:26	20:09:26	400	300	11	
002_FL17	5417	20:11:19	20:13:20	400	300	11	
		20:14:45					DS: BL56_20221018_201445
000_FL6	5606	20:14:45	20:16:21	400	300	11	
001_FL5	5605	20:18:18	20:20:03	400	300	11	
002_FL4	5604	20:22:00	20:23:49	400	300	11	
		20:24:00					Bathy test lines completed
		20:28:02					DS: BL50_20221018_202802
000_FL8	5008	20:28:02	20:31:51	400	300	11	
001_FL7	5007	20:33:30	20:36:46	400	300	11	
002_FL6	5006	20:39:42	20:42:20	400	300	11	
003_FL5	5005	20:44:23	20:46:56	400	300	11	
004_FL4	5004	20:48:43	20:50:54	400	300	11	
005_FL3	5003	20:52:45	20:54:43	400	300	11	
006_FL2	5002	20:56:44	20:58:45	400	300	11	
007_FL1	5001	21:00:21	21:01:53	400	300	11	
008_FL9	5009	21:05:46	21:09:44	400	300	11	
009_FL10	5010	21:11:45	21:15:28	400	300	11	
010_FL11	5011	21:17:32	21:21:17	400	300	11	
011_FL12	5012	21:23:31	21:27:27	400	300	11	
012_FL13	5013	21:29:29	21:33:16	400	300	11	
013_FL14	5014	21:35:31	21:39:25	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL50, BL51, BL52, BL54, BL56, QC6	**DATE:**	18 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 90
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-05

ENGINE START:	19:00	**ENGINE OFF:**	1:04	**ENGINE TIME:**	06:04
TAKEOFF:	19:35	**LANDING:**	0:48	**AIR TIME**	05:13

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
014_FL15	5015	21:41:41	21:45:39	400	300	11	
015_FL16	5016	21:47:28	21:51:17	400	300	11	
016_FL17	5017	21:54:04	21:57:36	400	300	11	
017_FL18	5018	21:59:28	22:00:00	400	300	11	BAD: Abandoned line due to traffic
018_FL18	5018	22:02:58	22:06:38	400	300	11	
019_FL19	5019	22:09:19	22:12:49	400	300	11	
020_FL20	5020	22:14:30	22:17:50	400	300	11	
021_FL21	5021	22:20:09	22:23:32	400	300	11	
022_FL23	5095	22:26:06	22:28:09	400	300	11	
		22:29:00					Completed BL50
		22:32:02					DS: BL51_20221018_223202
000_FL4	5104	22:32:02	22:35:29	400	300	11	
001_FL3	5103	22:37:17	22:39:56	400	300	11	
002_FL2	5102	22:42:06	22:44:40	400	300	11	
003_FL1	5101	22:46:47	22:47:38	400	300	11	
004_FL5	5105	22:49:40	22:53:17	400	300	11	
005_FL6	5106	22:55:02	22:58:17	400	300	11	
006_FL7	5107	23:00:07	23:03:25	400	300	11	
007_FL8	5108	23:05:28	23:08:47	400	300	11	
008_FL9	5109	23:10:37	23:14:06	400	300	11	
009_FL10	5110	23:15:41	23:18:57	400	300	11	
010_FL11	5111	23:20:47	23:24:12	400	300	11	
011_FL12	5112	23:25:42	23:29:00	400	300	11	
012_FL13	5113	23:31:23	23:35:07	400	300	11	
013_FL14	5114	23:36:28	23:39:53	400	300	11	
014_FL15	5115	23:41:26	23:45:12	400	300	11	
015_FL16	5116	23:46:35	23:49:58	400	300	11	
016_FL17	5117	23:51:56	23:55:28	400	300	11	
017_FL18	5118	23:57:03	00:00:22	400	300	11	
018_FL19	5119	00:02:23	00:05:58	400	300	11	
019_FL20	5120	00:07:30	00:10:58	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL50, BL51, BL52, BL54, BL56, QC6	**DATE:**	18 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 90
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-05

ENGINE START:	19:00	**ENGINE OFF:**	1:04	**ENGINE TIME:**	06:04
TAKEOFF:	19:35	**LANDING:**	0:48	**AIR TIME**	05:13

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
020_FL21	5121	00:12:59	00:16:25	400	300	11	
021_FL22	5122	00:18:08	00:21:31	400	300	11	
022_FL23	5123	00:23:36	00:27:04	400	300	11	
023_FL24	5124	00:28:48	00:32:10	400	300	11	
024_FL25	5125	00:34:00	00:37:36	400	300	11	
025_FL28	5195	00:40:13	00:42:26	400	300	11	
		00:43:00					Completed BL51
		00:48:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL52, QC62	**DATE:**	19 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 40
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-04

ENGINE START:	20:05	**ENGINE OFF:**	2:10	**ENGINE TIME:**	06:05
TAKEOFF:	20:21	**LANDING:**	1:57	**AIR TIME**	05:36

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		20:21:00					Takeoff
		20:25:50					DS: QC62_20221019_202550
000_FL1	6201	20:25:51	20:27:34	400	300	11	
		20:31:41					DS: BL52_20221019_203141
000_FL40	5295	20:31:41	20:34:02	400	300	11	BAD: Serial Pipe Error
		20:36:00					Soft Restart, Serial Pipe Error
		20:45:00					Soft Restart, Serial Pipe Error
		20:51:00					Closed GNSS over PAG1
		20:53:00					Full System Restart
		01:57:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL52, BL73	**DATE:**	19 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 50
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-04

ENGINE START:	20:05	**ENGINE OFF:**	2:10	**ENGINE TIME:**	06:05
TAKEOFF:	20:21	**LANDING:**	1:57	**AIR TIME**	05:36

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		20:21:00					Takeoff
		21:07:00					Initialized GNSS over PAG1
		21:13:44					DS: BL52_20221019_211344
000_FL40	5295	21:13:44	21:16:50	400	300	11	
001_FL1	5201	21:20:23	21:23:31	400	300	11	
002_FL2	5202	21:25:11	21:28:14	400	300	11	
003_FL5	5205	21:30:02	21:33:10	400	300	11	
004_FL6	5206	21:34:58	21:38:03	400	300	11	
005_FL7	5207	21:40:12	21:43:15	400	300	11	
006_FL8	5208	21:45:27	21:48:37	400	300	11	
007_FL9	5209	21:50:53	21:54:06	400	300	11	
008_FL10	5210	21:55:50	21:59:06	400	300	11	
009_FL11	5211	22:01:08	22:04:22	400	300	11	
010_FL13	5213	22:06:19	22:09:36	400	300	11	
011_FL14	5214	22:11:28	22:14:39	400	300	11	
012_FL15	5215	22:17:04	22:20:18	400	300	11	
013_FL16	5216	22:22:17	22:25:26	400	300	11	
014_FL17	5217	22:27:14	22:30:24	400	300	11	
015_FL18	5218	22:32:31	22:35:34	400	300	11	
016_FL19	5219	22:38:13	22:41:24	400	300	11	
017_FL20	5220	22:43:39	22:46:46	400	300	11	
018_FL21	5221	22:50:05	22:53:21	400	300	11	
019_FL22	5222	22:55:30	22:58:41	400	300	11	
020_FL23	5223	23:00:34	23:03:50	400	300	11	
021_FL24	5224	23:05:58	23:09:07	400	300	11	
022_FL25	5225	23:11:06	23:14:21	400	300	11	
023_FL26	5226	23:16:35	23:18:10	400	300	11	Shortened Line
024_FL27	5227	23:20:33	23:22:05	400	300	11	Shortened Line
025_FL28	5228	23:24:02	23:25:36	400	300	11	Shortened Line
026_FL29	5229	23:27:28	23:29:02	400	300	11	Shortened Line
027_FL30	5230	23:31:17	23:32:51	400	300	11	Shortened Line

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL52, BL73	**DATE:**	19 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 50
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-04

ENGINE START:	20:05	**ENGINE OFF:**	2:10	**ENGINE TIME:**	06:05
TAKEOFF:	20:21	**LANDING:**	1:57	**AIR TIME**	05:36

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
028_FL31	5231	23:34:47	23:36:18	400	300	11	Shortened Line
029_FL32	5232	23:38:09	23:40:24	400	300	11	
030_FL33	5233	23:41:26	23:43:03	400	300	11	Shortened Line
031_FL34	5234	23:44:53	23:46:25	400	300	11	Shortened Line
032_FL35	5235	23:48:21	23:49:51	400	300	11	Shortened Line
		23:51:00					Completed BL52
		23:56:38					DS: BL73_20221019_235638
000_FL47	0349	23:56:38	00:00:54	400	300	11	
001_FL48	0350	00:03:24	00:07:34	400	300	11	
002_FL49	0351	00:09:20	00:13:33	400	300	11	
003_FL50	0352	00:15:26	00:19:44	400	300	11	
004_FL51	0353	00:23:59	00:28:17	400	300	11	
005_FL52	0354	00:30:20	00:34:45	400	300	11	
006_FL53	0355	00:36:10	00:40:25	400	300	11	
007_FL54	0356	00:42:18	00:46:38	400	300	11	
008_FL55	0357	00:48:13	00:50:55	400	300	11	
009_FL56	0358	00:53:36	00:56:05	400	300	11	
010_FL57	0359	00:58:06	01:00:18	400	300	11	
011_FL58	0360	01:02:22	01:04:34	400	300	11	
012_FL59	0361	01:06:10	01:08:12	400	300	11	
013_FL60	0362	01:10:11	01:12:22	400	300	11	
014_FL61	0363	01:13:59	01:16:03	400	300	11	
015_FL62	0364	01:18:19	01:20:24	400	300	11	
016_FL63	0365	01:21:48	01:23:37	400	300	11	
017_FL64	0366	01:25:07	01:26:52	400	300	11	
018_FL65	0367	01:28:19	01:29:58	400	300	11	
019_FL66	0368	01:31:38	01:33:10	400	300	11	
020_FL67	0369	01:34:47	01:36:17	400	300	11	
021_FL68	0370	01:38:07	01:39:34	400	300	11	
022_FL69	0371	01:40:58	01:42:26	400	300	11	
023_FL70	0372	01:44:24	01:45:44	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL52, BL73	**DATE:**	19 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.

MISSION ID:	Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 50
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-04

ENGINE START:	20:05	**ENGINE OFF:**	2:10	**ENGINE TIME:**	06:05
TAKEOFF:	20:21	**LANDING:**	1:57	**AIR TIME**	05:36

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
024_FL71	0373	01:47:31	01:48:40	400	300	11	
025_FL72	0374	01:50:47	01:51:47	400	300	11	
026_FL73	0375	01:53:31	01:54:22	400	300	11	
		01:57:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL56, BL57, BL73, QC62	**DATE:**	20 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 60
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-05

ENGINE START:	19:25	**ENGINE OFF:**	1:25	**ENGINE TIME:**	06:00
TAKEOFF:	19:37	**LANDING:**	1:11	**AIR TIME**	05:34

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		19:37:00					Takeoff
		19:42:04					DS: QC62_20221020_194204
000_FL1	6201	19:42:04	19:43:47	400	300	11	
		19:46:41					DS: BL73_20221020_194641
000_FL46	0348	19:46:41	19:50:50	400	300	11	
001_FL45	0347	19:52:54	19:57:10	400	300	11	
002_FL44	0346	19:59:05	20:03:12	400	300	11	Light rain
003_FL43	0345	20:05:46	20:09:46	400	300	11	Light rain
004_FL74	0396	20:13:06	20:16:43	400	300	11	
005_FL19	0321	20:21:31	20:27:39	400	300	11	
006_FL18	0032	20:29:13	20:35:13	400	300	11	
007_FL20	0322	20:37:09	20:43:21	400	300	11	
008_FL17	0319	20:45:38	20:51:28	400	300	11	
009_FL16	0318	20:53:18	20:59:23	400	300	11	
010_FL15	0317	21:01:26	21:07:02	400	300	11	
011_FL14	0316	21:09:12	21:14:50	400	300	11	
012_FL13	0315	21:16:46	21:22:13	400	300	11	
013_FL12	0314	21:24:38	21:30:12	400	300	11	
014_FL11	0313	21:31:56	21:37:06	400	300	11	
015_FL10	0312	21:39:31	21:44:47	400	300	11	
016_FL9	0311	21:46:41	21:51:39	400	300	11	
017_FL8	0310	21:54:02	21:59:15	400	300	11	
018_FL7	0309	22:00:54	22:05:44	400	300	11	
019_FL6	0308	22:07:40	22:12:32	400	300	11	
020_FL5	0307	22:14:15	22:19:07	400	300	11	
021_FL21	0323	22:22:21	22:25:44	400	300	11	
022_FL22	0324	22:27:21	22:30:30	400	300	11	
023_FL23	0325	22:32:45	22:35:52	400	300	11	
024_FL24	0326	22:37:44	22:40:40	400	300	11	
025_FL25	0327	22:42:40	22:45:43	400	300	11	
026_FL26	0328	22:47:18	22:50:03	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL56, BL57, BL73, QC62	**DATE:**	20 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 60
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-05

ENGINE START:	19:25	**ENGINE OFF:**	1:25	**ENGINE TIME:**	06:00
TAKEOFF:	19:37	**LANDING:**	1:11	**AIR TIME**	05:34

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
027_FL27	0329	22:52:23	22:55:05	400	300	11	
028_FL28	0330	22:56:53	22:59:27	400	300	11	
029_FL29	0331	23:01:36	23:04:16	400	300	11	
030_FL30	0332	23:06:29	23:09:09	400	300	11	
031_FL42	0344	23:10:41	23:14:37	400	300	11	
032_FL41	0343	23:16:44	23:20:11	400	300	11	
033_FL40	0342	23:22:33	23:26:06	400	300	11	
		23:27:00					Moving to BL56 due to rain
		23:30:22					DS: BL56_20221020_233022
000_FL10	5610	23:30:22	23:30:59	400	300	11	
001_FL9	5609	23:33:14	23:33:56	400	300	11	
002_FL3	5603	23:36:38	23:38:15	400	300	11	
003_FL8	5608	23:40:26	23:41:18	400	300	11	
004_FL2	5602	23:44:01	23:45:44	400	300	11	
005_FL7	5607	23:47:51	23:48:42	400	300	11	
006_FL1	5601	23:51:39	23:53:14	400	300	11	
007_FL11	5695	23:55:22	23:56:25	400	300	11	
		23:57:00					Completed BL56
		23:59:39					DS: BL57_20221020_235939
000_FL4	5704	23:59:39	00:01:14	400	300	11	
001_FL8	5708	00:03:22	00:04:08	400	300	11	
002_FL7	5707	00:06:30	00:07:49	400	300	11	
003_FL6	5706	00:09:53	00:11:21	400	300	11	
004_FL5	5705	00:12:58	00:14:34	400	300	11	
005_FL3	5703	00:16:21	00:18:03	400	300	11	
006_FL2	5702	00:19:44	00:21:20	400	300	11	
007_FL1	5701	00:23:31	00:25:12	400	300	11	
008_FL9	5795	00:27:26	00:28:34	400	300	11	
		00:29:00					Completed BL57
		00:30:00					Soft Restart to change lidar drives
		00:36:41					DS: BL73_20221021_003641

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL56, BL57, BL73, QC62	**DATE:**	20 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 60
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-05

ENGINE START:	19:25	**ENGINE OFF:**	1:25	**ENGINE TIME:**	06:00
TAKEOFF:	19:37	**LANDING:**	1:11	**AIR TIME**	05:34

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
000_FL39	0341	00:36:41	00:40:12	400	300	11	
001_FL38	0340	00:41:48	00:43:26	400	300	11	Shortened Line
002_FL37	0339	00:45:49	00:47:18	400	300	11	Shortened Line
003_FL36	0338	00:49:00	00:50:22	400	300	11	Shortened Line
004_FL35	0337	00:52:20	00:53:51	400	300	11	Shortened Line
005_FL34	0336	00:55:48	00:57:12	400	300	11	Shortened Line
006_FL33	0335	00:59:01	01:00:21	400	300	11	Shortened Line
007_FL32	0334	01:02:11	01:03:26	400	300	11	Shortened Line
008_FL31	0333	01:06:06	01:07:17	400	300	11	Shortened Line
		01:08:00					Completed BL73
		01:11:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL11, BL12, BL21, BL22, BL23, BL24	**DATE:**	21 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, Rose, SeaMounts, Tau	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 110
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-04

ENGINE START:	18:48	**ENGINE OFF:**	0:42	**ENGINE TIME:**	05:54
TAKEOFF:	19:00	**LANDING:**	0:28	**AIR TIME**	05:28

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		19:00:00					Takeoff
		19:04:33					DS: QC62_20221021_190433
000_FL1	6201	19:04:33	19:06:21	400	300	11	
		19:55:47					DS: BL11_20221021_195547
000_FL16	1195	19:55:47	19:57:23	400	300	11	Laser did not stop firing; reflown
001_FL15	1115	19:59:32	20:01:04	400	300	11	
002_FL14	1114	20:02:56	20:04:20	400	300	11	
003_FL13	1113	20:06:38	20:08:07	400	300	11	
004_FL12	1112	20:10:09	20:11:36	400	300	11	
005_FL11	1111	20:13:28	20:14:52	400	300	11	
006_FL10	1110	20:16:38	20:18:01	400	300	11	
007_FL9	1109	20:19:42	20:21:12	400	300	11	
008_FL8	1108	20:23:00	20:24:24	400	300	11	
009_FL7	1107	20:26:02	20:27:28	400	300	11	
010_FL6	1106	20:29:18	20:30:41	400	300	11	
011_FL5	1105	20:32:45	20:34:10	400	300	11	
012_FL4	1104	20:36:06	20:37:34	400	300	11	
013_FL3	1103	20:39:24	20:40:56	400	300	11	
014_FL2	1102	20:42:39	20:44:09	400	300	11	
015_FL1	1101	20:45:53	20:47:21	400	300	11	
016_FL15	1115	20:48:45	20:50:10	400	300	11	
		20:51:00					Completed BL11
		21:15:02					DS: BL24_20221021_211502
000_FL1	2401	21:15:02	21:17:16	400	300	11	
001_FL2	2402	21:18:43	21:20:53	400	300	11	
002_FL3	2403	21:22:53	21:25:01	400	300	11	
003_FL4	2404	21:28:23	21:30:29	400	300	11	
004_FL5	2405	21:32:40	21:34:41	400	300	11	
005_FL6	2406	21:37:30	21:38:59	400	300	11	
006_FL7	2407	21:40:46	21:41:53	400	300	11	
007_FL8	2408	21:43:32	21:44:30	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL11, BL12, BL21, BL22, BL23, BL24	**DATE:**	21 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, Rose, SeaMounts, Tau	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 110
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-04

ENGINE START:	18:48	**ENGINE OFF:**	0:42	**ENGINE TIME:**	05:54
TAKEOFF:	19:00	**LANDING:**	0:28	**AIR TIME**	05:28

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
008_FL9	2495	21:46:10	21:46:55	400	300	11	BAD: Heavy Rain
		21:48:52					DS: BL25_20221021_214852
000_FL1	2501	21:48:52	21:49:53	400	300	11	BAD: Heavy Rain
		21:52:21					DS: BL22_20221021_215221
000_FL6	2206	21:52:21	21:55:15	400	300	11	Light Rain
001_FL5	2205	21:57:22	22:00:32	400	300	11	Light Rain
		22:01:00					Moving to BL12 due to rain
		22:04:16					DS: BL12_20221021_220416
000_FL1	1201	22:04:16	22:05:03	400	300	11	
001_FL2	1202	22:07:04	22:07:47	400	300	11	
002_FL3	1203	22:09:40	22:10:57	400	300	11	
003_FL4	1204	22:12:59	22:14:24	400	300	11	
004_FL5	1205	22:16:19	22:17:43	400	300	11	
005_FL6	1206	22:19:35	22:21:05	400	300	11	
006_FL7	1207	22:22:50	22:24:16	400	300	11	
007_FL8	1208	22:26:53	22:27:47	400	300	11	
008_FL9	1209	22:30:00	22:30:43	400	300	11	
009_FL10	1295	22:32:58	22:34:12	400	300	11	
010_FL11	1296	22:36:39	22:37:29	400	300	11	
		22:38:00					Completed BL12
		22:40:02					DS: BL25_20221021_224002
000_FL1	2501	22:40:02	22:41:09	400	300	11	
001_FL2	2502	22:42:58	22:44:00	400	300	11	
002_FL3	2503	22:46:02	22:46:58	400	300	11	
003_FL4	2595	22:48:51	22:49:49	400	300	11	
		22:52:00					Completed BL25
		22:53:38					DS: BL24_20221021_225338
000_FL9	2495	22:53:38	22:54:46	400	300	11	
		22:56:00					Completed BL24
		22:57:50					DS: BL23_20221021_225750
000_FL3	2303	22:57:50	22:58:55	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL11, BL12, BL21, BL22, BL23, BL24	**DATE:**	21 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, Rose, SeaMounts, Tau	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 110
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-04

ENGINE START:	18:48	**ENGINE OFF:**	0:42	**ENGINE TIME:**	05:54
TAKEOFF:	19:00	**LANDING:**	0:28	**AIR TIME**	05:28

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
001_FL2	2302	23:01:00	23:02:06	400	300	11	
002_FL1	2301	23:03:56	23:05:03	400	300	11	
003_FL6	2306	23:07:11	23:08:18	400	300	11	
004_FL5	2305	23:10:33	23:11:41	400	300	11	
005_FL4	2304	23:13:45	23:14:53	400	300	11	
006_FL7	2395	23:17:05	23:18:12	400	300	11	
		23:19:00					Completed BL23
		23:20:31					DS: BL22_20221021_232031
000_FL6	2206	23:20:31	23:23:33	400	300	11	
001_FL5	2205	23:25:16	23:28:29	400	300	11	
002_FL4	2204	23:30:17	23:33:16	400	300	11	
003_FL3	2203	23:35:24	23:38:38	400	300	11	
004_FL2	2202	23:40:21	23:43:13	400	300	11	
005_FL1	2201	23:45:27	23:47:58	400	300	11	
006_FL7	2295	23:50:30	23:51:27	400	300	11	
		23:52:00					Completed BL22
		23:54:04					DS: BL21_20221021_235404
000_FL9	2109	23:54:04	23:55:17	400	300	11	
001_FL8	2108	23:57:04	23:58:14	400	300	11	
002_FL7	2107	00:00:05	00:01:29	400	300	11	
		00:28:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL20, BL21, BL30, QC62	**DATE:**	22 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, OfuOlesega, Tau	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 60
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-03

ENGINE START:	18:47	**ENGINE OFF:**	21:13	**ENGINE TIME:**	02:26
TAKEOFF:	18:58	**LANDING:**	20:55	**AIR TIME**	01:57

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		18:58:00					Takeoff
		19:02:40					DS: QC62_20221022_190240
000_FL1	6201	19:02:40	19:04:27	400	300	11	
		19:29:47					DS: BL21_20221022_192947
000_FL8	2108	19:29:47	19:31:03	400	300	11	
001_FL6	2106	19:32:57	19:34:14	400	300	11	
002_FL5	2105	19:36:22	19:37:36	400	300	11	
003_FL4	2104	19:39:19	19:40:38	400	300	11	
004_FL3	2103	19:42:21	19:43:41	400	300	11	
005_FL2	2102	19:46:34	19:46:37	400	300	11	BAD: Collected within turn
007_FL3	2103	19:49:14	19:50:26	400	300	11	
008_FL2	2102	19:52:05	19:53:15	400	300	11	
009_FL1	2101	19:55:39	19:56:33	400	300	11	
010_FL10	2195	19:58:44	19:59:57	400	300	11	
		20:01:00					Completed BL21
		20:02:16					DS: BL20_20221022_200216
000_FL8	2008	20:02:16	20:05:02	400	300	11	
001_FL7	2007	20:06:43	20:09:26	400	300	11	
002_FL6	2006	20:11:50	20:14:35	400	300	11	
003_FL5	2005	20:16:22	20:19:05	400	300	11	
004_FL4	2004	20:20:40	20:23:29	400	300	11	BAD: Light rain throughout entire line
		20:26:00					Moving to Ofu Olesega due to rain
		20:28:45					DS: BL30_20221022_202845
000_FL12	3012	20:28:45	20:30:55	400	300	11	
001_FL11	3011	20:32:30	20:34:31	400	300	11	BAD: Light rain throughout entire line
		20:37:00					Ending survey; Poor weather conditions
		20:55:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL53, BL54, BL55, BL58, QC62	**DATE:**	28 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 60
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-04

ENGINE START:	19:51	**ENGINE OFF:**	23:49	**ENGINE TIME:**	03:58
TAKEOFF:	20:11	**LANDING:**	23:34	**AIR TIME**	03:23

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		20:11:00					Takeoff
		20:15:22					DS: QC62_20221028_201522
000_FL1	6201	20:15:22	20:17:01	400	300	11	
		20:20:21					DS: BL58_20221028_202021
000_FL7	5895	20:20:21	20:20:27	400	300	11	BAD: Eye Safety
001_FL7	5895	20:20:48	20:21:18	400	300	11	
002_FL6	5806	20:24:11	20:26:15	400	300	11	
003_FL5	5805	20:28:52	20:31:09	400	300	11	
004_FL4	5804	20:33:55	20:36:15	400	300	11	
005_FL3	5803	20:39:02	20:41:27	400	300	11	
006_FL2	5802	20:44:17	20:46:28	400	300	11	
007_FL1	5801	20:52:09	20:52:54	400	300	11	BAD: Serial Pipe Error
		20:55:00					Soft Restart
		21:07:00					Soft Restart
		21:13:01					DS: BL58_20221028_211301
000_FL1	5801	21:13:01	21:15:13	400	300	11	
		21:16:00					Completed BL58
		21:19:01					DS: BL55_20221028_211901
000_FL9	5509	21:19:01	21:20:33	400	300	11	
001_FL4	5504	21:23:42	21:23:57	400	300	11	BAD: Eye Safety
002_FL4	5504	21:24:13	21:25:58	400	300	11	
003_FL8	5508	21:28:24	21:30:36	400	300	11	
004_FL3	5503	21:33:23	21:33:34	400	300	11	BAD: Eye Safety
005_FL3	5503	21:33:49	21:34:03	400	300	11	BAD: Eye Safety
006_FL3	5503	21:34:21	21:34:36	400	300	11	BAD: Eye Safety
007_FL3	5503	21:34:59	21:35:37	400	300	11	
008_FL7	5507	21:38:12	21:40:25	400	300	11	
009_FL6	5506	21:45:29	21:47:46	400	300	11	
010_FL5	5505	21:52:17	21:54:27	400	300	11	
011_FL3	5503	21:58:46	22:01:03	400	300	11	
012_FL2	5502	22:05:56	22:08:14	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL53, BL54, BL55, BL58, QC62	**DATE:**	28 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	10-15 kts @ 60
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-04

ENGINE START:	19:51	**ENGINE OFF:**	23:49	**ENGINE TIME:**	03:58
TAKEOFF:	20:11	**LANDING:**	23:34	**AIR TIME**	03:23

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
013_FL1	5501	22:12:31	22:14:45	400	300	11	
014_FL10	5595	22:17:19	22:18:20	400	300	11	
		22:19:00					Completed BL55
		22:20:26					DS: BL54_20221028_222026
000_FL26	5495	22:20:26	22:22:26	400	300	11	
001_FL25	5425	22:26:24	22:28:17	400	300	11	
002_FL22	5422	22:31:06	22:32:59	400	300	11	
003_FL21	5421	22:35:21	22:37:25	400	300	11	
004_FL20	5420	22:39:40	22:41:41	400	300	11	
005_FL19	5419	22:43:45	22:45:39	400	300	11	
006_FL18	5418	22:48:39	22:50:41	400	300	11	
007_FL16	5416	22:53:12	22:55:11	400	300	11	
008_FL15	5415	22:58:00	23:00:02	400	300	11	
		23:01:00					Completed BL54
		23:03:04					DS: BL53_20221028_230304
000_FL23	5395	23:03:04	23:04:53	400	300	11	
001_FL22	5322	23:08:12	23:11:19	400	300	11	
002_FL21	5321	23:13:49	23:17:00	400	300	11	BAD: Light Rain
003_FL20	5320	23:19:20	23:22:48	400	300	11	BAD: Heavy Rain
		23:25:00					Ending survey due to rain
		23:34:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL10, QC62	**DATE:**	29 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, Swains	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	5 kts @ 100
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-03

ENGINE START:	18:57	**ENGINE OFF:**	22:29	**ENGINE TIME:**	03:32
TAKEOFF:	19:10	**LANDING:**	22:11	**AIR TIME**	03:01

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		19:10:00					Takeoff
		19:16:45					DS: QC62_20221029_191645
000_FL1	6201	19:16:45	19:18:28	400	300	11	
		19:57:00					Soft Restart
		20:22:20					DS: BL10_20221029_202220
000_FL14	1095	20:22:20	20:23:49	400	300	11	
001_FL1	1001	20:26:08	20:27:25	400	300	11	
002_FL2	1002	20:29:38	20:31:01	400	300	11	
003_FL3	1003	20:33:29	20:34:55	400	300	11	
004_FL4	1004	20:36:58	20:38:24	400	300	11	
005_FL5	1005	20:40:37	20:42:08	400	300	11	
006_FL6	1006	20:44:32	20:46:02	400	300	11	
007_FL7	1007	20:48:20	20:49:51	400	300	11	
008_FL8	1008	20:51:50	20:53:13	400	300	11	
009_FL9	1009	20:55:28	20:56:53	400	300	11	
010_FL10	1010	20:58:52	21:00:15	400	300	11	
011_FL11	1011	21:02:27	21:03:40	400	300	11	
012_FL12	1012	21:05:42	21:06:49	400	300	11	
013_FL13	1013	21:08:50	21:09:48	400	300	11	
		21:10:00					Completed BL10
		22:11:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL53, BL59, QC62	**DATE:**	29 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PAG1	**WIND:**	5-10 kts @ 0
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-03

ENGINE START:	22:29	**ENGINE OFF:**	0:44	**ENGINE TIME:**	02:15
TAKEOFF:	22:39	**LANDING:**	0:28	**AIR TIME**	01:49

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		22:39:00					Takeoff
		22:43:35					DS: QC62_20221029_224335
000_FL1	6201	22:43:35	22:45:19	400	300	11	
		22:48:58					DS: BL53_20221029_224858
000_FL21	5321	22:48:58	22:52:26	400	300	11	
001_FL20	5320	22:54:41	22:58:05	400	300	11	
002_FL19	5319	23:00:07	23:03:30	400	300	11	
003_FL18	5318	23:05:57	23:09:34	400	300	11	
004_FL17	5317	23:11:31	23:15:01	400	300	11	
005_FL16	5316	23:17:13	23:20:55	400	300	11	
006_FL15	5315	23:22:55	23:26:31	400	300	11	
007_FL14	5314	23:28:51	23:32:34	400	300	11	
008_FL13	5313	23:34:38	23:38:14	400	300	11	
009_FL12	5312	23:40:21	23:44:01	400	300	11	
010_FL11	5311	23:45:56	23:47:16	400	300	11	Shortened Line
011_FL10	5310	23:49:32	23:50:53	400	300	11	Shortened Line
012_FL9	5309	23:52:47	23:54:10	400	300	11	Shortened Line
		23:55:00					Completed BL53
		23:57:07					DS: BL59_20221029_235707
000_FL13	5995	23:57:07	23:58:25	400	300	11	
001_FL12	5912	00:01:04	00:02:14	400	300	11	
002_FL11	5911	00:04:20	00:05:32	400	300	11	
003_FL10	5910	00:07:50	00:09:08	400	300	11	
004_FL9	5909	00:11:57	00:13:15	400	300	11	
005_FL8	5908	00:15:49	00:16:02	400	300	11	BAD: Eye Safety
006_FL8	5908	00:16:06	00:16:24	400	300	11	BAD: Eye Safety
007_FL1	5901	00:19:43	00:20:30	400	300	11	
008_FL2	5902	00:23:02	00:24:01	400	300	11	
		00:28:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL20, BL26, BL30, BL31, QC62	**DATE:**	30 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, OfuOlesega, Tau	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PAG1	**WIND:**	10 kts @ 60
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	19:09	**ENGINE OFF:**	22:47	**ENGINE TIME:**	03:38
TAKEOFF:	19:40	**LANDING:**	22:31	**AIR TIME**	02:51

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		19:40:00					Takeoff
		19:44:40					DS: QC62_20221030_194440
000_FL1	6201	19:44:40	19:44:59	400	300	11	BAD: Stopped line due to rain
001_FL1	6201	19:45:45	19:45:47	400	300	11	BAD: Laser firing improperly
002_FL1	6201	20:03:50	20:03:55	400	300	11	BAD: Laser firing improperly
		20:09:57					DS: BL20_20221030_200957
000_FL5	2005	20:09:57	20:12:37	400	300	11	
001_FL4	2004	20:15:09	20:17:49	400	300	11	
002_FL3	2003	20:20:10	20:22:53	400	300	11	Light Rain
003_FL2	2002	20:25:17	20:27:48	400	300	11	
004_FL9	2095	20:30:49	20:31:57	400	300	11	
005_FL1	2001	20:35:35	20:38:01	400	300	11	
		20:39:00					Completed BL20
		20:40:08					DS: BL26_20221030_204008
000_FL1	2601	20:40:08	20:41:06	400	300	11	
001_FL2	2602	20:43:38	20:44:31	400	300	11	Light Rain
002_FL3	2603	20:46:41	20:47:38	400	300	11	
003_FL4	2695	20:50:11	20:51:06	400	300	11	
		20:52:00					Completed BL26
		20:55:08					DS: BL31_20221030_205508
000_FL8	3108	20:55:08	20:57:41	400	300	11	
001_FL15	3115	21:00:05	21:00:26	400	300	11	BAD: Eye Safety
002_FL15	3115	21:00:33	21:00:56	400	300	11	BAD: Eye Safety
003_FL15	3115	21:01:06	21:01:49	400	300	11	Line ended early due to terrain
004_FL9	3109	21:04:41	21:07:14	400	300	11	
005_FL10	3110	21:09:51	21:12:15	400	300	11	
006_FL11	3111	21:14:29	21:17:00	400	300	11	
007_FL12	3112	21:19:30	21:21:54	400	300	11	
008_FL13	3113	21:23:54	21:26:00	400	300	11	
009_FL7	3107	21:28:40	21:31:34	400	300	11	
010_FL14	3114	21:33:35	21:34:02	400	300	11	BAD: Eye Safety

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL20, BL26, BL30, BL31, QC62	**DATE:**	30 October 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Andrew B.
MISSION ID:	AmericanSamoa, OfuOlesega, Tau	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PAG1	**WIND:**	10 kts @ 60
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	19:09	**ENGINE OFF:**	22:47	**ENGINE TIME:**	03:38
TAKEOFF:	19:40	**LANDING:**	22:31	**AIR TIME**	02:51

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
011_FL14	3114	21:34:17	21:35:32	400	300	11	
012_FL6	3106	21:38:05	21:40:56	400	300	11	
013_FL5	3105	21:43:12	21:45:41	400	300	11	Low altitude at start of line
014_FL16	3195	21:48:36	21:49:56	400	300	11	
		21:51:00					Completed BL31
		21:52:30					DS: BL30_20221030_215230
000_FL11	3011	21:52:30	21:54:32	400	300	11	
001_FL10	3010	21:56:56	21:59:00	400	300	11	
002_FL9	3009	22:01:23	22:03:22	400	300	11	
		22:06:00					Ending survey due to rain
		22:26:39					DS: QC62_20221030_222639
000_FL1	6201	22:26:39	22:28:21	400	300	11	
		22:31:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL30, BL32, BL33, BL34, BL35, BL3(	**DATE:**	1 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, OfuOlesega	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 90
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-04

ENGINE START:	20:30	**ENGINE OFF:**	2:07	**ENGINE TIME:**	05:37
TAKEOFF:	20:49	**LANDING:**	1:51	**AIR TIME**	05:02

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		20:49:00					Takeoff
		20:58:03					DS: QC62_20221101_205803
000_FL1	6201	20:58:03	20:59:48	400	300	11	
		21:22:12					DS: BL30_20221101_212212
000_FL8	3008	21:22:12	21:24:25	400	300	11	
001_FL7	3007	21:27:02	21:29:04	400	300	11	
002_FL6	3006	21:31:42	21:33:47	400	300	11	
003_FL5	3005	21:36:01	21:38:01	400	300	11	
004_FL4	3004	21:40:26	21:42:19	400	300	11	
005_FL3	3003	21:44:44	21:46:18	400	300	11	
006_FL13	3095	21:48:21	21:49:44	400	300	11	
		21:52:00					Completed BL30
		21:52:07					DS: BL35_20221101_215207
000_FL8	3595	21:52:07	21:53:13	400	300	11	
001_FL1	3501	21:58:38	22:00:15	400	300	11	
002_FL2	3502	22:03:12	22:05:16	400	300	11	
003_FL3	3503	22:07:42	22:09:48	400	300	11	
004_FL4	3504	22:12:43	22:14:55	400	300	11	
005_FL5	3505	22:17:36	22:19:48	400	300	11	
006_FL6	3506	22:22:25	22:24:41	400	300	11	
		22:26:00					Completed BL35
		22:27:03					DS: BL32_20221101_222703
000_FL9	3295	22:27:03	22:28:10	400	300	11	
001_FL1	3201	22:30:28	22:31:54	400	300	11	
002_FL2	3202	22:34:08	22:35:33	400	300	11	
003_FL3	3203	22:37:36	22:39:05	400	300	11	
004_FL4	3204	22:41:27	22:42:50	400	300	11	
005_FL5	3205	22:45:04	22:46:26	400	300	11	
006_FL6	3206	22:48:36	22:50:04	400	300	11	
007_FL7	3207	22:52:46	22:53:53	400	300	11	
008_FL8	3208	22:56:23	22:57:49	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL30, BL32, BL33, BL34, BL35, BL3(	**DATE:**	1 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, OfuOlesega	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 90
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-04

ENGINE START:	20:30	**ENGINE OFF:**	2:07	**ENGINE TIME:**	05:37
TAKEOFF:	20:49	**LANDING:**	1:51	**AIR TIME**	05:02

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		22:59:00					Completed BL32
		23:00:33					DS: BL33_20221101_230033
000_FL8	3395	23:00:33	23:01:35	400	300	11	
001_FL1	3301	23:04:32	23:05:22	400	300	11	
002_FL7	3307	23:07:47	23:08:53	400	300	11	
003_FL2	3302	23:11:09	23:12:08	400	300	11	
004_FL6	3306	23:14:31	23:15:38	400	300	11	
005_FL3	3303	23:17:50	23:18:56	400	300	11	
006_FL5	3305	23:21:17	23:22:22	400	300	11	
007_FL4	3304	23:24:44	23:25:49	400	300	11	
		23:27:00					Completed BL33
		23:30:18					DS: BL34_20221101_233018
000_FL13	3495	23:30:18	23:31:35	400	300	11	
001_FL1	3401	23:34:21	23:35:29	400	300	11	
002_FL2	3402	23:37:35	23:38:45	400	300	11	
003_FL3	3403	23:40:55	23:42:04	400	300	11	
004_FL4	3404	23:44:34	23:45:44	400	300	11	
005_FL5	3405	23:47:55	23:49:08	400	300	11	
006_FL6	3406	23:51:31	23:52:40	400	300	11	
007_FL7	3407	23:54:59	23:56:12	400	300	11	
008_FL8	3408	23:58:38	23:59:50	400	300	11	
009_FL9	3409	00:02:06	00:03:13	400	300	11	
		00:05:00					Completed BL34
		00:07:18					DS: BL36_20221102_000718
000_FL15	3695	00:07:18	00:07:44	400	300	11	Eye Safety
001_FL15	3695	00:08:10	00:09:04	400	300	11	
002_FL1	3601	00:11:18	00:12:31	400	300	11	Rain at start of line
003_FL8	3608	00:15:03	00:16:18	400	300	11	
004_FL2	3602	00:18:37	00:19:54	400	300	11	
005_FL9	3609	00:22:12	00:23:25	400	300	11	
006_FL3	3603	00:25:35	00:26:52	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL30, BL32, BL33, BL34, BL35, BL3(	**DATE:**	1 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, OfuOlesega	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 90
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-04

ENGINE START:	20:30	**ENGINE OFF:**	2:07	**ENGINE TIME:**	05:37
TAKEOFF:	20:49	**LANDING:**	1:51	**AIR TIME**	05:02

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
007_FL4	3604	00:29:53	00:31:09	400	300	11	
008_FL5	3605	00:33:34	00:34:54	400	300	11	
009_FL6	3606	00:37:20	00:38:34	400	300	11	
010_FL7	3607	00:40:45	00:42:00	400	300	11	
011_FL10	3610	00:44:20	00:45:35	400	300	11	
012_FL14	3614	00:47:49	00:48:54	400	300	11	Eye Safety at start of line
013_FL11	3611	00:52:20	00:53:26	400	300	11	
014_FL13	3613	00:55:56	00:57:05	400	300	11	Eye Safety at start of line
015_FL12	3612	00:59:32	00:59:58	400	300	11	BAD: Eye Safety
016_FL12	3612	01:02:49	01:03:53	400	300	11	
		01:04:00					Completed BL36
		01:05:53					DS: BL37_20221102_010553
000_FL1	3701	01:05:53	01:06:54	400	300	11	
001_FL2	3702	01:09:02	01:10:03	400	300	11	
002_FL3	3703	01:12:04	01:13:06	400	300	11	
003_FL7	3707	01:15:34	01:16:27	400	300	11	
004_FL4	3704	01:18:53	01:19:55	400	300	11	
005_FL6	3706	01:22:39	01:23:41	400	300	11	
006_FL5	3705	01:25:58	01:27:01	400	300	11	
007_FL8	3795	01:29:23	01:30:25	400	300	11	
		01:32:00					Completed BL37
		01:51:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL28, BL38, BL39, QC62	**DATE:**	2 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, OfuOlesega, Tau	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	5-10 kts @ 80
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	19:12	**ENGINE OFF:**	21:37	**ENGINE TIME:**	02:25
TAKEOFF:	19:27	**LANDING:**	21:21	**AIR TIME**	01:54

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		19:27:00					Takeoff
		19:49:24					DS: BL38_20221102_194924
000_FL1	3801	19:49:24	19:50:22	400	300	11	
001_FL2	3802	19:52:32	19:53:34	400	300	11	
002_FL8	3808	19:56:02	19:56:45	400	300	11	
003_FL3	3803	19:59:51	20:00:57	400	300	11	
004_FL7	3807	20:03:21	20:04:20	400	300	11	
005_FL6	3806	20:06:26	20:07:32	400	300	11	
006_FL4	3804	20:09:45	20:10:49	400	300	11	
007_FL5	3805	20:13:25	20:14:30	400	300	11	
		20:15:00					Completed BL38
		20:17:13					DS: BL39_20221102_201713
000_FL6	3995	20:17:13	20:18:18	400	300	11	
001_FL1	3901	20:20:23	20:21:26	400	300	11	
002_FL2	3902	20:23:41	20:24:48	400	300	11	
003_FL3	3903	20:26:48	20:27:49	400	300	11	
004_FL4	3904	20:30:05	20:31:03	400	300	11	
005_FL5	3905	20:33:16	20:34:10	400	300	11	
		20:35:00					Completed BL39
		20:39:15					DS: BL28_20221102_203915
000_FL6	2806	20:39:15	20:40:56	400	300	11	Pulled off early due to terrain
001_FL5	2805	20:44:33	20:46:17	400	300	11	Pulled off early due to terrain
002_FL4	2804	20:49:23	20:51:07	400	300	11	Pulled off early due to terrain
		20:55:00					Moved to Tutuila due to rain
		21:16:13					DS: QC62_20221102_211613
000_FL1	6201	21:16:13	21:17:58	400	300	11	
		21:19:00					Ending Survey due to rain
		21:21:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL75, BL76, QC62	**DATE:**	3 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	Calm @ 290
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-04

ENGINE START:	19:31	**ENGINE OFF:**	23:07	**ENGINE TIME:**	03:36
TAKEOFF:	19:49	**LANDING:**	22:48	**AIR TIME**	02:59

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		19:49:00					Takeoff
		19:54:48					DS: QC62_20221103_195448
000_FL1	6201	19:54:48	19:56:29	400	300	11	
		20:01:32					DS: BL75_20221103_200132
003_FL67	0485	20:08:35	20:09:35	400	300	11	Eye Safety at end of line
004_FL66	0484	20:13:02	20:14:00	400	300	11	
005_FL62	0480	20:32:26	20:33:50	400	300	11	
006_FL61	0479	20:36:09	20:37:16	400	300	11	
007_FL60	0478	20:40:05	20:41:10	400	300	11	
008_FL59	0477	20:47:03	20:48:00	400	300	11	
009_FL58	0476	20:51:20	20:51:39	400	300	11	BAD: Eye Safety
010_FL58	0476	20:54:22	20:55:15	400	300	11	
011_FL57	0475	20:57:31	20:58:24	400	300	11	
012_FL56	0474	21:01:30	21:02:27	400	300	11	
013_FL55	0473	21:04:46	21:05:45	400	300	11	
014_FL54	0472	21:08:06	21:08:54	400	300	11	
015_FL46	0464	21:12:57	21:14:11	400	300	11	
		21:15:00					Moved to BL76 due to rain
		21:19:47					DS: BL76_20221103_211947
000_FL22	0522	21:19:47	21:21:29	400	300	11	
001_FL21	0521	21:23:46	21:25:26	400	300	11	
002_FL20	0520	21:27:49	21:29:31	400	300	11	
003_FL19	0519	21:31:24	21:32:59	400	300	11	
004_FL18	0518	21:35:20	21:36:15	400	300	11	
005_FL17	0517	21:38:33	21:39:25	400	300	11	
006_FL16	0516	21:42:22	21:43:53	400	300	11	
007_FL15	0515	21:46:08	21:47:36	400	300	11	
008_FL14	0514	21:50:00	21:51:31	400	300	11	
009_FL13	0513	21:54:23	21:55:21	400	300	11	
010_FL12	0512	21:57:48	21:58:59	400	300	11	
011_FL23	0523	22:02:27	22:03:31	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL75, BL76, QC62	**DATE:**	3 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	Calm @ 290
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-04

ENGINE START:	19:31	**ENGINE OFF:**	23:07	**ENGINE TIME:**	03:36
TAKEOFF:	19:49	**LANDING:**	22:48	**AIR TIME**	02:59

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
012_FL24	0524	22:06:18	22:07:17	400	300	11	
013_FL25	0525	22:09:34	22:09:59	400	300	11	BAD: Stopped line early for rain
		22:21:06					DS: BL76_20221103_222106
000_FL57	0557	22:21:06	22:22:04	400	300	11	
001_FL54	0554	22:24:46	22:25:32	400	300	11	
002_FL56	0556	22:27:38	22:28:39	400	300	11	
003_FL58	0558	22:30:46	22:31:40	400	300	11	
004_FL55	0555	22:34:03	22:35:02	400	300	11	
		22:37:38					DS: BL75_20221103_223738
000_FL20	0438	22:37:38	22:39:21	400	300	11	BAD: Rain
		22:43:42					DS: BL76_20221103_224342
000_FL38	0538	22:43:42	22:44:43	400	300	11	BAD: Rain/Clouds
		22:45:00					Ending Survey due to rain
		22:48:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL75, BL76, QC62	**DATE:**	5 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	5-10 kts @ 130
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-03

ENGINE START:	17:41	**ENGINE OFF:**	21:00	**ENGINE TIME:**	03:19
TAKEOFF:	18:00	**LANDING:**	20:53	**AIR TIME**	02:53

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		18:00:00					Takeoff
		18:13:12					DS: QC62_20221105_181312
000_FL1	6201	18:13:12	18:14:59	400	300	11	
		18:21:21					DS: BL75_20221105_182121
000_FL53	0471	18:21:21	18:21:39	400	300	11	BAD: Eye Safety
001_FL53	0471	18:24:45	18:25:36	400	300	11	
002_FL52	0470	18:29:54	18:30:50	400	300	11	
003_FL51	0469	18:34:50	18:35:51	400	300	11	
004_FL50	0468	18:39:59	18:41:04	400	300	11	
005_FL49	0467	18:50:52	18:52:04	400	300	11	Eye Safety at end of line
006_FL48	0466	18:56:30	18:57:42	400	300	11	
007_FL47	0465	19:00:43	19:01:54	400	300	11	
008_FL46	0464	19:04:20	19:05:34	400	300	11	
009_FL45	0463	19:08:27	19:09:19	400	300	11	
010_FL44	0462	19:11:33	19:13:14	400	300	11	
011_FL43	0461	19:15:47	19:17:24	400	300	11	
012_FL42	0460	19:19:32	19:21:03	400	300	11	
013_FL41	0459	19:23:42	19:24:31	400	300	11	
014_FL40	0458	19:27:04	19:27:53	400	300	11	
015_FL39	0457	19:30:18	19:31:15	400	300	11	
016_FL38	0456	19:34:02	19:34:59	400	300	11	
017_FL37	0455	19:37:14	19:38:24	400	300	11	
018_FL36	0454	19:41:09	19:42:20	400	300	11	
019_FL35	0453	19:45:09	19:46:20	400	300	11	
020_FL34	0452	19:49:19	19:50:42	400	300	11	
021_FL33	0451	19:53:09	19:54:30	400	300	11	
022_FL32	0450	19:57:06	19:58:39	400	300	11	Rain at end of line
023_FL31	0449	20:01:22	20:02:50	400	300	11	Rain at end of line
024_FL30	0448	20:05:52	20:07:27	400	300	11	
025_FL29	0447	20:09:31	20:10:23	400	300	11	
026_FL28	0446	20:12:57	20:13:47	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL75, BL76, QC62	**DATE:**	5 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	5-10 kts @ 130
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-03

ENGINE START:	17:41	**ENGINE OFF:**	21:00	**ENGINE TIME:**	03:19
TAKEOFF:	18:00	**LANDING:**	20:53	**AIR TIME**	02:53

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
027_FL27	0445	20:16:22	20:17:18	400	300	11	
028_FL26	0444	20:19:23	20:20:18	400	300	11	
029_FL25	0443	20:22:20	20:23:18	400	300	11	
030_FL24	0442	20:25:07	20:25:56	400	300	11	
		20:29:11					DS: BL76_20221105_202911
000_FL1	0501	20:29:11	20:30:11	400	300	11	
001_FL11	0511	20:34:24	20:35:31	400	300	11	
002_FL10	0510	20:40:00	20:40:46	400	300	11	
003_FL9	0509	20:44:34	20:45:24	400	300	11	
		20:48:00					Ending Survey due to turbulence
		20:53:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL29, QC62	**DATE:**	9 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tau	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	5-10 kts @ 10
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-05

ENGINE START:	21:20	**ENGINE OFF:**	0:28	**ENGINE TIME:**	03:08
TAKEOFF:	21:35	**LANDING:**	0:18	**AIR TIME**	02:43

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		21:35:00					Takeoff
		21:41:51					DS: QC62_20221109_214151
000_FL1	6201	21:41:51	21:43:27	400	300	11	
		22:08:50					DS: BL29_20221109_220850
000_FL27	2927	22:08:50	22:09:47	400	300	11	
001_FL16	2916	22:10:23	22:11:20	400	300	11	
002_FL10	2910	22:13:51	22:15:35	400	300	11	
003_FL20	2920	22:16:59	22:17:57	400	300	11	
004_FL23	2923	22:19:58	22:21:08	400	300	11	
005_FL29	2929	22:22:02	22:23:01	400	300	11	
006_FL6	2906	22:25:09	22:25:59	400	300	11	
007_FL21	2921	22:28:02	22:29:38	400	300	11	
008_FL18	2918	22:31:02	22:32:17	400	300	11	
009_FL12	2912	22:34:49	22:35:35	400	300	11	Rain at end
010_FL5	2905	22:37:41	22:38:30	400	300	11	
011_FL19	2919	22:39:20	22:40:14	400	300	11	
012_FL28	2928	22:41:02	22:42:25	400	300	11	
013_FL35	2935	22:44:51	22:46:03	400	300	11	Rain at end
014_FL9	2909	22:48:01	22:48:44	400	300	11	BAD: Rain
015_FL30	2930	22:50:46	22:51:54	400	300	11	BAD: Rain
016_FL15	2915	22:58:14	22:59:19	400	300	11	
017_FL11	2911	23:02:04	23:02:52	400	300	11	
018_FL14	2914	23:05:06	23:05:54	400	300	11	
019_FL13	2913	23:08:33	23:09:19	400	300	11	
020_FL17	2917	23:11:34	23:13:18	400	300	11	
021_FL26	2926	23:16:12	23:17:11	400	300	11	Peeled off due to terrain
022_FL25	2925	23:19:35	23:20:20	400	300	11	
023_FL24	2924	23:23:14	23:23:56	400	300	11	
024_FL34	2934	23:27:26	23:28:41	400	300	11	
025_FL4	2904	23:31:10	23:31:59	400	300	11	
		23:57:00					Ending Survey due to rain

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL29, QC62	**DATE:**	9 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tau	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	5-10 kts @ 10
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-05

ENGINE START:	21:20	**ENGINE OFF:**	0:28	**ENGINE TIME:**	03:08
TAKEOFF:	21:35	**LANDING:**	0:18	**AIR TIME**	02:43

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		00:18:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL77, QC62	**DATE:**	10 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 100
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	19:28	**ENGINE OFF:**	1:11	**ENGINE TIME:**	05:43
TAKEOFF:	19:56	**LANDING:**	1:00	**AIR TIME**	05:04

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		00:53:00					Ending Survey due to fuel
		19:56:00					Takeoff
		20:02:39					DS: QC62_20221110_200239
000_FL1	6201	20:02:39	20:03:19	400	300	11	
		20:07:31					DS: BL77_20221110_200731
000_FL76	0654	20:07:31	20:08:00	400	300	11	
001_FL75	0653	20:18:52	20:20:18	400	300	11	
002_FL74	0652	20:23:15	20:25:46	400	300	11	
003_FL73	0651	20:28:06	20:30:51	400	300	11	
004_FL72	0650	20:33:15	20:35:48	400	300	11	
005_FL71	0649	20:38:06	20:40:46	400	300	11	
006_FL70	0648	20:43:09	20:45:43	400	300	11	
007_FL69	0647	20:48:02	20:50:48	400	300	11	
008_FL68	0646	20:53:08	20:55:52	400	300	11	
009_FL67	0645	20:58:15	21:01:03	400	300	11	
010_FL66	0644	21:03:17	21:06:02	400	300	11	
011_FL65	0643	21:08:25	21:11:17	400	300	11	
012_FL87	0665	21:14:26	21:17:15	400	300	11	
013_FL86	0664	21:19:53	21:22:47	400	300	11	
014_FL85	0663	21:31:29	21:34:03	400	300	11	
015_FL84	0662	21:36:48	21:39:29	400	300	11	
016_FL83	0661	21:41:50	21:44:25	400	300	11	
017_FL82	0660	21:47:06	21:49:59	400	300	11	
018_FL81	0659	21:52:13	21:54:40	400	300	11	
019_FL80	0658	21:57:19	21:59:38	400	300	11	
020_FL79	0657	22:01:59	22:02:37	400	300	11	
021_FL78	0656	22:10:31	22:11:41	400	300	11	
022_FL77	0655	22:14:40	22:15:31	400	300	11	
023_FL55	0633	22:18:45	22:19:40	400	300	11	
024_FL54	0632	22:24:10	22:25:09	400	300	11	
025_FL53	0631	22:28:43	22:29:50	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL77, QC62	**DATE:**	10 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 100
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	19:28	**ENGINE OFF:**	1:11	**ENGINE TIME:**	05:43
TAKEOFF:	19:56	**LANDING:**	1:00	**AIR TIME**	05:04

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
026_FL52	0630	22:33:26	22:34:33	400	300	11	
027_FL51	0629	22:39:48	22:40:31	400	300	11	
028_FL50	0628	22:42:28	22:43:14	400	300	11	
029_FL49	0627	22:45:37	22:46:25	400	300	11	
030_FL48	0626	22:48:37	22:49:27	400	300	11	
031_FL47	0625	22:52:15	22:53:02	400	300	11	
032_FL46	0624	22:57:04	22:57:57	400	300	11	
033_FL45	0623	23:04:55	23:05:51	400	300	11	Pulled off end due to terrain
034_FL44	0622	23:09:31	23:10:25	400	300	11	Pulled off end due to terrain
035_FL93	0671	23:13:55	23:14:49	400	300	11	
036_FL92	0670	23:17:38	23:18:33	400	300	11	
037_FL91	0669	23:20:53	23:21:49	400	300	11	
038_FL90	0668	23:24:38	23:25:30	400	300	11	
039_FL89	0667	23:27:59	23:28:55	400	300	11	
040_FL88	0666	23:31:45	23:32:39	400	300	11	
041_FL25	0583	23:36:50	23:37:47	400	300	11	
042_FL24	0582	23:40:05	23:41:05	400	300	11	
043_FL23	0581	23:43:14	23:44:11	400	300	11	
044_FL22	0580	23:46:23	23:47:17	400	300	11	
045_FL21	0579	23:49:32	23:50:24	400	300	11	
046_FL1	0559	23:52:40	23:53:27	400	300	11	
047_FL2	0560	23:55:34	23:56:22	400	300	11	
048_FL3	0561	23:58:27	23:59:35	400	300	11	
049_FL4	0562	00:01:59	00:03:08	400	300	11	
050_FL5	0563	00:05:47	00:07:00	400	300	11	
051_FL33	0591	00:09:59	00:10:43	400	300	11	
052_FL32	0590	00:13:19	00:14:08	400	300	11	
053_FL31	0589	00:16:17	00:17:08	400	300	11	
054_FL30	0588	00:19:28	00:20:16	400	300	11	
055_FL29	0587	00:22:34	00:22:55	400	300	11	BAD: Eye safety
056_FL29	0587	00:30:18	00:31:05	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL77, QC62	**DATE:**	10 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 100
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	19:28	**ENGINE OFF:**	1:11	**ENGINE TIME:**	05:43
TAKEOFF:	19:56	**LANDING:**	1:00	**AIR TIME**	05:04

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
057_FL28	0586	00:33:18	00:34:02	400	300	11	
058_FL27	0585	00:36:38	00:37:30	400	300	11	
059_FL26	0584	00:39:56	00:40:54	400	300	11	
060_FL6	0564	00:43:41	00:44:27	400	300	11	
061_FL7	0565	00:47:25	00:48:21	400	300	11	
		01:00:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL77, QC62	**DATE:**	11 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 100
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	2:27	**ENGINE OFF:**	5:20	**ENGINE TIME:**	02:53
TAKEOFF:	2:42	**LANDING:**	5:09	**AIR TIME**	02:27

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		02:42:00					Takeoff
		02:48:48					DS: QC62_20221111_024848
000_FL1	6201	02:48:48	02:50:32	400	300	11	
		02:55:12					DS: BL77_20221111_025512
000_FL35	0603	02:55:12	02:55:53	400	300	11	
001_FL99	0677	02:57:53	02:58:44	400	300	11	
002_FL98	0676	03:01:59	03:02:48	400	300	11	Pulled off end of line, terrain
003_FL97	0675	03:06:05	03:06:54	400	300	11	Pulled off end of line, terrain
004_FL96	0674	03:10:05	03:10:53	400	300	11	
005_FL56	0634	03:13:18	03:14:15	400	300	11	
006_FL16	0574	03:15:43	03:16:38	400	300	11	
007_FL17	0575	03:20:03	03:21:01	400	300	11	
008_FL12	0570	03:22:42	03:23:28	400	300	11	
009_FL13	0571	03:25:48	03:26:32	400	300	11	
010_FL14	0572	03:28:35	03:29:15	400	300	11	
011_FL15	0573	03:31:35	03:32:24	400	300	11	
012_FL57	0635	03:34:44	03:35:34	400	300	11	
013_FL8	0566	03:37:52	03:38:41	400	300	11	
014_FL9	0567	03:40:57	03:41:45	400	300	11	
015_FL10	0568	03:44:05	03:44:54	400	300	11	
016_FL11	0569	03:47:06	03:47:52	400	300	11	
017_FL18	0576	03:50:50	03:51:49	400	300	11	
018_FL19	0577	03:54:20	03:55:09	400	300	11	
019_FL20	0578	03:57:22	03:58:17	400	300	11	
020_FL41	0609	04:00:46	04:01:35	400	300	11	
021_FL42	0610	04:03:37	04:03:48	400	300	11	BAD: Eye safety
022_FL42	0610	04:06:46	04:07:33	400	300	11	
023_FL43	0611	04:10:53	04:11:41	400	300	11	
024_FL58	0636	04:14:20	04:15:03	400	300	11	
025_FL59	0637	04:17:25	04:18:21	400	300	11	
026_FL60	0638	04:20:28	04:21:28	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL77, QC62	**DATE:**	11 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 100
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	2:27	**ENGINE OFF:**	5:20	**ENGINE TIME:**	02:53
TAKEOFF:	2:42	**LANDING:**	5:09	**AIR TIME**	02:27

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
027_FL61	0639	04:23:32	04:24:53	400	300	11	
028_FL62	0640	04:27:13	04:28:35	400	300	11	
029_FL63	0641	04:30:51	04:32:15	400	300	11	
030_FL64	0642	04:34:13	04:35:32	400	300	11	
031_FL94	0672	04:37:47	04:38:51	400	300	11	
032_FL95	0673	04:40:47	04:41:55	400	300	11	
033_FL100	0678	04:44:08	04:45:08	400	300	11	
034_FL101	0679	04:47:41	04:47:56	400	300	11	
035_FL37	0605	04:57:17	04:58:21	400	300	11	
036_FL38	0606	05:00:54	05:01:56	400	300	11	
037_FL39	0670	05:04:45	05:05:44	400	300	11	
		05:07:00					Ending Survey due to fuel
		05:09:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL28, BL29, BL41, QC62	**DATE:**	11 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, OfuOlesega, Tau	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 90
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-03

ENGINE START:	18:15	**ENGINE OFF:**	22:26	**ENGINE TIME:**	04:11
TAKEOFF:	18:37	**LANDING:**	22:11	**AIR TIME**	03:34

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		18:37:00					Takeoff
		18:44:00					DS: QC62_20221111_184400
000_FL1	6201	18:44:00	18:45:43	400	300	11	
		19:12:59					DS: BL28_20221111_191259
000_FL2	2802	19:12:59	19:14:33	400	300	11	Peeled off end, terrain
001_FL1	2801	19:18:03	19:19:31	400	300	11	Peeled off end, terrain
002_FL21	2821	19:22:30	19:23:39	400	300	11	Peeled off end, terrain
003_FL13	2813	19:28:06	19:28:56	400	300	11	
004_FL12	2812	19:32:46	19:34:09	400	300	11	
005_FL11	2811	19:37:49	19:39:27	400	300	11	
006_FL10	2810	19:44:02	19:45:36	400	300	11	
007_FL9	2809	19:49:33	19:51:03	400	300	11	
008_FL8	2808	19:55:03	19:56:34	400	300	11	
009_FL7	2807	20:00:28	20:01:57	400	300	11	
		20:03:00					Moved to BL29
		20:04:29					DS: BL29_20221111_200429
000_FL7	2907	20:04:29	20:05:15	400	300	11	
001_FL8	2908	20:08:38	20:09:28	400	300	11	
002_FL32	2932	20:13:07	20:14:15	400	300	11	
003_FL31	2931	20:16:58	20:18:09	400	300	11	
004_FL2	2902	20:21:31	20:22:22	400	300	11	
		20:26:00					Moved to Tau BL41
		20:27:23					DS: BL41_20221111_202723
000_FL49	4149	20:27:23	20:28:23	400	300	11	
001_FL1	4101	20:29:15	20:30:11	400	300	11	
002_FL36	4136	20:31:51	20:32:43	400	300	11	
003_FL19	4119	20:36:52	20:37:43	400	300	11	
004_FL18	4118	20:39:48	20:40:53	400	300	11	
005_FL27	4127	20:43:09	20:44:04	400	300	11	
006_FL46	4146	20:46:25	20:47:43	400	300	11	
007_FL20	4120	20:51:28	20:52:19	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL28, BL29, BL41, QC62	**DATE:**	11 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, OfuOlesega, Tau	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 90
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-03

ENGINE START:	18:15	**ENGINE OFF:**	22:26	**ENGINE TIME:**	04:11
TAKEOFF:	18:37	**LANDING:**	22:11	**AIR TIME**	03:34

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
008_FL4	4104	20:55:13	20:56:05	400	300	11	
009_FL11	4111	20:58:02	20:58:58	400	300	11	
010_FL35	4135	21:02:02	21:02:48	400	300	11	
011_FL48	4148	21:05:24	21:06:36	400	300	11	
012_FL2	4102	21:07:33	21:08:28	400	300	11	
013_FL47	4147	21:10:31	21:11:30	400	300	11	
014_FL32	4132	21:12:42	21:13:26	400	300	11	
015_FL40	4140	21:15:39	21:16:28	400	300	11	
016_FL33	4133	21:17:52	21:18:55	400	300	11	
017_FL14	4114	21:20:45	21:21:36	400	300	11	
018_FL5	4105	21:24:25	21:25:30	400	300	11	
019_FL39	4139	21:26:53	21:27:40	400	300	11	
020_FL31	4131	21:29:29	21:30:15	400	300	11	
021_FL3	4103	21:30:58	21:31:55	400	300	11	
022_FL6	4106	21:33:54	21:35:01	400	300	11	
		21:36:00					Ending Survey, block completion
		22:11:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL75, BL76, QC62	**DATE:**	12 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	5-10 kts @ 10
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-05

ENGINE START:	17:45	**ENGINE OFF:**	22:12	**ENGINE TIME:**	04:27
TAKEOFF:	17:58	**LANDING:**	22:01	**AIR TIME**	04:03

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		17:58:00					Takeoff
		18:04:39					DS: QC62_20221112_180439
000_FL1	6201	18:04:39	18:06:23	400	300	11	
		18:13:22					DS: BL75_20221112_181322
000_FL23	0441	18:13:22	18:14:15	400	300	11	
001_FL22	0440	18:16:29	18:17:23	400	300	11	
002_FL21	0439	18:19:36	18:20:47	400	300	11	
003_FL20	0438	18:23:17	18:25:01	400	300	11	
004_FL19	0437	18:27:37	18:29:30	400	300	11	
005_FL18	0436	18:31:28	18:32:24	400	300	11	
006_FL17	0435	18:35:39	18:36:34	400	300	11	
007_FL16	0434	18:39:28	18:40:43	400	300	11	
008_FL11	0429	18:46:55	18:47:29	400	300	11	
009_FL15	0433	18:50:30	18:51:55	400	300	11	
010_FL12	0043	18:54:16	18:55:24	400	300	11	
011_FL14	0432	18:58:16	18:59:35	400	300	11	
012_FL13	0431	19:01:54	19:03:06	400	300	11	
013_FL10	0428	19:06:10	19:07:01	400	300	11	
014_FL9	0427	19:09:25	19:10:18	400	300	11	
015_FL8	0426	19:13:45	19:14:43	400	300	11	
016_FL7	0425	19:17:15	19:18:06	400	300	11	
017_FL6	0424	19:20:30	19:21:39	400	300	11	
018_FL5	0423	19:24:05	19:24:54	400	300	11	
019_FL4	0422	19:26:51	19:27:42	400	300	11	
020_FL3	0421	19:30:24	19:31:10	400	300	11	
021_FL2	0420	19:33:03	19:33:53	400	300	11	
022_FL1	0419	19:36:05	19:36:52	400	300	11	
		19:37:00					Moved to BL76
		19:39:28					DS: BL76_20221112_193928
000_FL53	0553	19:39:28	19:40:23	400	300	11	
001_FL52	0552	19:42:46	19:43:56	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL75, BL76, QC62	**DATE:**	12 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	5-10 kts @ 10
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-05

ENGINE START:	17:45	**ENGINE OFF:**	22:12	**ENGINE TIME:**	04:27
TAKEOFF:	17:58	**LANDING:**	22:01	**AIR TIME**	04:03

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
002_FL51	0551	19:46:24	19:47:24	400	300	11	
003_FL50	0550	19:50:09	19:51:14	400	300	11	
004_FL49	0549	19:53:49	19:54:49	400	300	11	
005_FL48	0548	19:56:40	19:57:32	400	300	11	
006_FL47	0547	19:59:52	20:00:49	400	300	11	
007_FL46	0546	20:03:02	20:04:00	400	300	11	
008_FL45	0545	20:06:28	20:07:45	400	300	11	
009_FL44	0544	20:10:26	20:11:23	400	300	11	
010_FL43	0543	20:15:11	20:16:02	400	300	11	
011_FL42	0542	20:18:37	20:19:32	400	300	11	
012_FL41	0541	20:21:37	20:22:35	400	300	11	
013_FL40	0540	20:24:55	20:25:53	400	300	11	
014_FL39	0539	20:28:25	20:29:27	400	300	11	
015_FL38	0538	20:31:26	20:32:27	400	300	11	
016_FL37	0537	20:35:26	20:36:18	400	300	11	
017_FL36	0536	20:38:12	20:38:58	400	300	11	
018_FL35	0535	20:41:19	20:42:06	400	300	11	
019_FL34	0534	20:43:59	20:45:17	400	300	11	
020_FL33	0533	20:47:54	20:49:07	400	300	11	
021_FL32	0532	20:52:52	20:53:40	400	300	11	
022_FL31	0531	20:56:01	20:57:03	400	300	11	
023_FL30	0530	20:59:06	21:00:00	400	300	11	
024_FL29	0529	21:02:05	21:02:55	400	300	11	
025_FL28	0528	21:05:02	21:05:54	400	300	11	
026_FL27	0527	21:08:27	21:09:15	400	300	11	
027_FL25	0525	21:11:18	21:12:27	400	300	11	
028_FL26	0526	21:14:25	21:15:23	400	300	11	
029_FL8	0508	21:19:51	21:20:41	400	300	11	
030_FL7	0507	21:23:06	21:23:58	400	300	11	
031_FL6	0506	21:26:27	21:27:22	400	300	11	
032_FL5	0505	21:30:01	21:30:54	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL75, BL76, QC62	**DATE:**	12 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	5-10 kts @ 10
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-05

ENGINE START:	17:45	**ENGINE OFF:**	22:12	**ENGINE TIME:**	04:27
TAKEOFF:	17:58	**LANDING:**	22:01	**AIR TIME**	04:03

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
033_FL4	0504	21:33:46	21:35:02	400	300	11	
034_FL3	0503	21:37:56	21:38:56	400	300	11	
		21:47:00					Moved to BL75
		21:47:24					DS: BL75_20221112_214724
000_FL65	0483	21:47:24	21:48:08	400	300	11	
001_FL64	0482	21:50:22	21:51:10	400	300	11	
002_FL63	0481	21:53:30	21:54:21	400	300	11	
		21:55:00					Ending Survey, blocks complete
		22:01:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL59, BL74, QC62	**DATE:**	13 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	5 kts @ 0
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-05

ENGINE START:	0:01	**ENGINE OFF:**	2:19	**ENGINE TIME:**	02:18
TAKEOFF:	0:11	**LANDING:**	2:08	**AIR TIME**	01:57

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		00:11:00					Takeoff
		00:38:29					DS: QC62_20221113_003829
000_FL1	6201	00:38:29	00:40:14	400	300	11	
		00:44:33					DS: BL74_20221113_004433
000_FL9	0409	00:44:33	00:45:30	400	300	11	
001_FL8	0408	00:47:37	00:48:43	400	300	11	
002_FL5	0405	00:51:09	00:52:24	400	300	11	
003_FL7	0407	00:54:32	00:55:37	400	300	11	
004_FL4	0404	00:58:01	00:59:18	400	300	11	
005_FL6	0406	01:01:39	01:02:47	400	300	11	
006_FL3	0403	01:05:45	01:07:00	400	300	11	
007_FL2	0402	01:09:03	01:10:18	400	300	11	
008_FL1	0401	01:12:46	01:13:58	400	300	11	Peeled end, terrain
009_FL10	7410	01:15:46	01:16:12	400	300	11	BAD: Eye safety
010_FL18	0418	01:18:45	01:20:09	400	300	11	Peeled end, terrain
011_FL11	7411	01:23:22	01:23:35	400	300	11	BAD: Eye safety
012_FL17	0417	01:26:07	01:27:37	400	300	11	Peeled end, terrain
013_FL12	0412	01:29:29	01:31:08	400	300	11	
014_FL16	0416	01:33:35	01:35:10	400	300	11	
015_FL13	0413	01:37:10	01:38:53	400	300	11	
016_FL15	0415	01:41:19	01:43:02	400	300	11	Peeled end, terrain
017_FL14	7414	01:45:04	01:45:25	400	300	11	BAD: Eye safety
		01:47:00					Moved to BL59
		01:50:58					DS: BL59_20221113_015058
000_FL13	5995	01:50:58	01:52:11	400	300	11	Peeled end, terrain
001_FL1	5901	01:54:22	01:55:11	400	300	11	
002_FL2	5902	01:57:16	01:58:10	400	300	11	
003_FL3	5903	02:00:23	02:01:31	400	300	11	
004_FL4	5904	02:03:37	02:04:48	400	300	11	Peeled end, terrain
		02:05:00					Ending Survey, blocks complete
		02:08:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL41, QC62	**DATE:**	13 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, OfuOlesega	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	Calm @ 0
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-05

ENGINE START:	18:08	**ENGINE OFF:**	21:14	**ENGINE TIME:**	03:06
TAKEOFF:	18:22	**LANDING:**	21:03	**AIR TIME**	02:41

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		18:22:00					Takeoff
		18:52:01					DS: BL41_20221113_185201
000_FL3	4103	18:52:01	18:52:53	400	300	11	
001_FL6	4106	18:55:21	18:56:31	400	300	11	
002_FL7	4107	18:58:40	18:59:33	400	300	11	
003_FL8	4108	19:02:43	19:03:33	400	300	11	
004_FL9	4109	19:07:13	19:07:39	400	300	11	BAD: Eye safety
005_FL9	4109	19:11:16	19:12:30	400	300	11	
006_FL10	4110	19:15:51	19:16:46	400	300	11	
007_FL12	4112	19:19:26	19:20:31	400	300	11	
008_FL15	4115	19:30:25	19:31:18	400	300	11	Peeled off ending, terrain
009_FL16	4116	19:34:00	19:34:57	400	300	11	
010_FL17	4117	19:36:59	19:37:50	400	300	11	
011_FL20	4120	19:40:45	19:41:38	400	300	11	
012_FL22	4122	19:47:15	19:47:57	400	300	11	
013_FL28	4128	19:55:32	19:56:27	400	300	11	
014_FL29	4129	19:59:19	20:00:16	400	300	11	BAD: Over speed tolerances
015_FL29	4129	20:02:38	20:03:40	400	300	11	
016_FL30	4130	20:06:38	20:07:21	400	300	11	
017_FL34	4134	20:10:35	20:11:17	400	300	11	
018_FL44	4144	20:14:00	20:15:10	400	300	11	
019_FL45	4145	20:17:01	20:18:08	400	300	11	
020_FL41	4141	20:20:55	20:21:54	400	300	11	
021_FL42	4142	20:24:47	20:25:56	400	300	11	
022_FL37	4137	20:29:05	20:29:49	400	300	11	
023_FL38	4138	20:33:36	20:34:20	400	300	11	
		20:40:00					Ending Survey, block complete
		20:58:59					DS: QC62_20221113_205859
000_FL1	6201	20:58:59	21:00:40	400	300	11	
		21:03:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL72, QC62	**DATE:**	18 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	Calm @ 110
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	17:19	**ENGINE OFF:**	18:49	**ENGINE TIME:**	01:30
TAKEOFF:	17:37	**LANDING:**	18:39	**AIR TIME**	01:02

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		17:37:00					Takeoff
		17:42:14					DS: QC62_20221118_174214
000_FL1	6201	17:42:14	17:43:57	400	440	11	BAD: Incorrect MPIA Settings
		17:46:20					DS: BL72_20221118_174620
000_FL1	0301	17:46:20	17:47:42	800	440	11	BAD: Incorrect MPIA Settings
001_FL2	0302	17:50:24	17:52:16	800	440	11	BAD: Incorrect MPIA Settings
002_FL3	0303	17:55:00	17:56:58	800	440	11	BAD: Incorrect MPIA Settings
003_FL4	0304	17:59:45	18:01:50	800	440	11	BAD: Incorrect MPIA Settings
004_FL5	0305	18:06:50	18:11:53	800	440	11	BAD: Incorrect MPIA Settings
005_FL6	0306	18:14:50	18:20:00	800	440	11	BAD: Incorrect MPIA Settings
006_FL7	7207	18:22:34	18:28:04	800	440	11	BAD: Incorrect MPIA Settings
007_FL8	7208	18:30:52	18:33:36	800	440	11	BAD: Incorrect MPIA Settings
		18:34:00					Ending Survey due to clouds
		18:39:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL72, QC62	**DATE:**	21 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2500ft
BASE STATION:	PPP	**WIND:**	Calm @ 0
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-04

ENGINE START:	17:12	**ENGINE OFF:**	18:23	**ENGINE TIME:**	01:11
TAKEOFF:	17:26	**LANDING:**	18:11	**AIR TIME**	00:45

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		17:26:00					Takeoff
		17:33:41					DS: QC62_20221121_173341
000_FL1	6201	17:33:41	17:34:58	400	440		
		17:45:49					DS: BL72_20221121_174549
000_FL1	0301	17:45:50	17:46:37	800	440	11	
001_FL2	0302	17:50:56	17:51:49	800	440	11	
002_FL3	0303	17:54:15	17:55:07	800	440	11	
003_FL4	0304	17:57:21	17:58:18	800	440	11	
004_FL5	0305	18:00:55	18:01:41	800	440	11	
005_FL6	0306	18:04:53	18:06:09	800	440	11	
		18:07:00					Ending Survey due to clouds
		18:11:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL78, BL79, QC62	**DATE:**	22 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 90
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	20:45	**ENGINE OFF:**	23:35	**ENGINE TIME:**	02:50
TAKEOFF:	21:00	**LANDING:**	23:26	**AIR TIME**	02:26

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		21:00:00					Takeoff
		21:03:58					DS: QC62_20221122_210358
000_FL1	6201	21:03:58	21:05:41	400	300	11	
		21:09:20					DS: BL79_20221122_210920
000_FL33	0736	21:09:20	21:10:35	400	300	11	
001_FL32	0735	21:12:22	21:13:43	400	300	11	
002_FL31	0734	21:15:47	21:17:17	400	300	11	
003_FL30	0733	21:19:02	21:20:33	400	300	11	
004_FL29	0732	21:21:22	21:22:07	400	300	11	
005_FL28	0731	21:24:09	21:25:10	400	300	11	
006_FL27	0730	21:26:52	21:28:07	400	300	11	
007_FL26	0729	21:30:15	21:31:36	400	300	11	
008_FL25	0728	21:33:05	21:34:42	400	300	11	
009_FL24	0727	21:36:43	21:38:25	400	300	11	
010_FL23	0726	21:40:09	21:42:00	400	300	11	
011_FL22	0725	21:44:15	21:46:08	400	300	11	
012_FL21	0724	21:47:42	21:49:48	400	300	11	
013_FL20	0723	21:51:49	21:53:47	400	300	11	
014_FL19	0722	21:56:05	21:58:20	400	300	11	
015_FL18	0721	22:00:29	22:02:38	400	300	11	
016_FL17	0720	22:04:21	22:06:41	400	300	11	
017_FL16	0719	22:08:37	22:10:50	400	300	11	
018_FL15	0718	22:12:20	22:14:42	400	300	11	
019_FL14	0717	22:16:56	22:18:23	400	300	11	
020_FL13	0716	22:20:26	22:22:02	400	300	11	
021_FL12	0715	22:23:51	22:25:22	400	300	11	
022_FL11	0714	22:27:07	22:28:49	400	300	11	
023_FL10	0713	22:30:51	22:32:25	400	300	11	
024_FL9	0712	22:33:57	22:35:27	400	300	11	
025_FL8	0711	22:37:31	22:39:00	400	300	11	
026_FL7	0710	22:40:41	22:42:10	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL78, BL79, QC62	**DATE:**	22 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Peter B.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 90
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	20:45	**ENGINE OFF:**	23:35	**ENGINE TIME:**	02:50
TAKEOFF:	21:00	**LANDING:**	23:26	**AIR TIME**	02:26

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
027_FL6	0709	22:44:21	22:45:46	400	300	11	
028_FL35	0738	22:47:52	22:48:45	400	300	11	
029_FL34	0737	22:51:50	22:52:50	400	300	11	
030_FL5	0708	22:57:21	22:58:40	400	300	11	
031_FL4	0707	23:00:37	23:01:57	400	300	11	
032_FL3	0706	23:04:44	23:05:44	400	300	11	
033_FL2	0705	23:07:16	23:08:18	400	300	11	
034_FL1	0704	23:10:04	23:11:04	400	300	11	
		23:12:00					Moved to BL78
		23:15:13					DS: BL78_20221122_231513
000_FL38	7838	23:15:13	23:19:23	600	440	11	BAD: Incorrect Settings
001_FL35	7835	23:22:00	23:22:17	600	440	11	BAD: Line aborted, clouds
		23:23:00					Ending Survey due to clouds
		23:26:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL78, QC62	**DATE:**	25 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 50
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-04

ENGINE START:	17:28	**ENGINE OFF:**	19:00	**ENGINE TIME:**	01:32
TAKEOFF:	17:42	**LANDING:**	18:49	**AIR TIME**	01:07

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		17:42:00					Takeoff
		17:46:25					DS: QC62_20221125_174625
000_FL1	6201	17:46:25	17:48:05	400	440	11	
		17:51:27					DS: BL78_20221125_175127
000_FL15	0693	17:51:27	17:52:28	600	440	11	
001_FL14	0692	17:54:30	17:55:44	600	440	11	
002_FL25	7825	17:58:46	17:59:52	600	440	11	BAD: Aborted, clouds
003_FL24	0702	18:04:31	18:08:59	600	440	11	
004_FL24	0702	18:11:13	00:00:00	600		11	BAD: Invalid data
005_FL23	0701	18:11:15	18:15:30	600	440	11	
006_FL22	0700	18:17:22	18:21:59	600	440	11	
007_FL16	0694	18:24:34	18:28:26	600	440	11	
008_FL17	0695	18:30:44	18:34:39	600	440	11	
009_FL37	0703	18:38:40	18:39:01	600	440	11	BAD: Aborted, clouds
010_FL37	0703	18:39:05	18:40:01	600	440	11	BAD: Aborted, clouds
011_FL37	0703	18:40:13	18:41:38	600	440	11	
		18:43:00					Ending Survey due to clouds
		18:49:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL81	**DATE:**	29 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	Tutuila	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	5-10 kts @ 60
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	1:46	**ENGINE OFF:**	3:07	**ENGINE TIME:**	01:21
TAKEOFF:	2:12	**LANDING:**	2:54	**AIR TIME**	00:42

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		02:12:00					Takeoff
		02:19:49					DS: BL81_20221129_021949
000_FL6	0816	02:19:49	02:20:15	400	300	11	BAD: System offline
001_FL6	0816	02:22:28	02:23:23	400	300	11	
002_FL7	0817	02:25:18	02:26:17	400	300	11	
003_FL8	0818	02:28:00	02:29:03	400	300	11	
004_FL9	0819	02:31:08	02:32:15	400	300	11	
005_FL10	0820	02:34:12	02:35:21	400	300	11	
006_FL11	0821	02:37:46	02:38:55	400	300	11	Light rain throughout line
007_FL12	0822	02:40:49	02:41:59	400	300	11	Light rain throughout line
008_FL13	0823	02:43:38	02:44:58	400	300	11	Light rain throughout line
009_FL14	0824	02:46:49	02:47:59	400	300	11	Light rain throughout line
		02:49:00					Ending Survey due to clouds
		02:54:00					Landing

WOOLPERT

FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL80, QC62	**DATE:**	30 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	Calm @ 90
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-04

ENGINE START:	18:17	**ENGINE OFF:**	21:19	**ENGINE TIME:**	03:02
TAKEOFF:	18:42	**LANDING:**	21:08	**AIR TIME**	02:26

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		18:42:00					Takeoff
		18:46:39					DS: QC62_20221130_184639
000_FL1	6201	18:46:39	18:47:53	400	300	11	
		18:51:00					DS: BL80_20221130_185100
000_FL1	0739	18:51:00	18:51:39	400	300	11	
001_FL23	0760	19:04:47	19:05:11	400	300	11	
002_FL24	0761	19:06:55	19:07:56	400	300	11	
003_FL25	0762	19:09:47	19:10:48	400	300	11	
004_FL26	0763	19:12:37	19:14:03	400	300	11	
005_FL27	0764	19:15:51	19:17:25	400	300	11	
006_FL28	0765	19:19:14	19:20:49	400	300	11	
007_FL29	0766	19:22:46	19:24:18	400	300	11	
008_FL30	0767	19:26:24	19:27:57	400	300	11	
009_FL31	0768	19:29:58	19:31:34	400	300	11	
010_FL32	0769	19:33:48	19:35:23	400	300	11	
011_FL33	0770	19:37:58	19:39:08	400	300	11	
012_FL34	0771	19:41:02	19:42:23	400	300	11	
013_FL35	0772	19:44:26	19:46:05	400	300	11	
014_FL36	0773	19:48:14	19:50:04	400	300	11	
015_FL37	0774	19:52:01	19:54:00	400	300	11	
016_FL38	0775	19:56:11	19:58:18	400	300	11	
017_FL39	0776	20:00:17	20:02:21	400	300	11	BAD: Eye safety
018_FL40	0777	20:05:08	20:05:24	400	300	11	BAD: Eye safety
019_FL40	0777	20:08:31	20:10:41	400	300	11	
020_FL48	0785	20:12:58	20:14:22	400	300	11	
021_FL41	0779	20:17:06	20:19:17	400	300	11	Rain
022_FL47	0784	20:21:10	20:22:41	400	300	11	
023_FL42	0779	20:25:13	20:27:24	400	300	11	Rain
024_FL46	0783	20:29:36	20:31:09	400	300	11	
025_FL49	0786	20:38:25	20:39:25	400	300	11	
026_FL50	0787	20:41:58	20:42:58	400	300	11	Rain

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL80, QC62	**DATE:**	30 November 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 1500ft
BASE STATION:	PPP	**WIND:**	Calm @ 90
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-04

ENGINE START:	18:17	**ENGINE OFF:**	21:19	**ENGINE TIME:**	03:02
TAKEOFF:	18:42	**LANDING:**	21:08	**AIR TIME**	02:26

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
027_FL51	0788	20:44:41	20:45:51	400	300	11	
028_FL52	0789	20:49:39	20:50:51	400	300	11	Rain
029_FL53	0790	20:54:22	20:56:03	400	300	11	
030_FL53	0790	21:01:22	21:01:34	400	300	11	BAD: Line aborted, clouds
		21:04:00					Ending Survey, clouds
		21:08:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL80, BL81, QC62	**DATE:**	1 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	5-10 kts @ 100
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	22:14	**ENGINE OFF:**	2:41	**ENGINE TIME:**	04:27
TAKEOFF:	22:40	**LANDING:**	2:30	**AIR TIME**	03:50

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		22:40:00					Takeoff
		22:43:54					DS: QC62_20221201_224354
000_FL1	6201	22:43:54	22:44:23	400	300	11	BAD: System not armed
001_FL1	6201	22:49:22	22:49:52	400	300	11	
		22:56:45					DS: BL80_20221201_225645
000_FL19	0757	22:56:45	22:58:45	400	300	11	
001_FL20	0758	23:00:34	23:02:36	400	300	11	
002_FL21	0759	23:04:36	23:06:35	400	300	11	
003_FL52	0789	23:09:14	23:10:32	400	300	11	
004_FL53	0790	23:12:26	23:12:31	400	300	11	BAD: Eye safety
005_FL53	0790	23:15:50	23:17:12	400	300	11	
006_FL54	0791	23:19:14	23:19:27	400	300	11	BAD: Eye safety
007_FL54	0791	23:19:45	23:20:05	400	300	11	BAD: Eye safety
008_FL54	0791	23:22:18	23:23:45	400	300	11	
009_FL55	0800	23:25:56	23:27:15	400	300	11	
010_FL56	0801	23:29:17	23:30:37	400	300	11	
011_FL60	0805	23:33:01	23:33:47	400	300	11	
012_FL11	0749	23:36:15	23:38:02	400	300	11	
013_FL12	0750	23:40:09	23:42:06	400	300	11	
014_FL58	0803	23:44:05	23:44:51	400	300	11	
015_FL61	0806	23:46:57	23:47:46	400	300	11	
016_FL59	0804	23:49:57	23:50:46	400	300	11	
017_FL62	0807	23:51:37	23:52:18	400	300	11	
018_FL5	0743	23:54:47	23:55:37	400	300	11	
019_FL6	0744	23:57:49	23:58:09	400	300	11	BAD: Eye safety
020_FL6	0744	00:00:39	00:01:36	400	300	11	
021_FL7	0745	00:03:34	00:04:28	400	300	11	
022_FL8	8008	00:06:18	00:07:08	400	300	11	BAD: Eye safety
023_FL9	0747	00:10:10	00:10:43	400	300	11	BAD: Eye safety
024_FL9	0747	00:10:53	00:11:13	400	300	11	BAD: Eye safety
025_FL10	0748	00:12:33	00:13:28	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL80, BL81, QC62	**DATE:**	1 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	5-10 kts @ 100
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	22:14	**ENGINE OFF:**	2:41	**ENGINE TIME:**	04:27
TAKEOFF:	22:40	**LANDING:**	2:30	**AIR TIME**	03:50

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
026_FL57	8057	00:15:35	00:15:43	400	300	11	BAD: Eye safety
027_FL4	0742	00:16:44	00:17:23	400	300	11	
028_FL57	0802	00:19:12	00:19:52	400	300	11	
		00:21:00					Moved to block 81
		00:27:43					DS: BL81_20221202_002743
000_FL40	0850	00:27:43	00:28:39	400	300	11	
001_FL39	0849	00:30:20	00:31:32	400	300	11	
002_FL38	0848	00:33:52	00:35:11	400	300	11	
003_FL37	0847	00:37:01	00:38:28	400	300	11	
004_FL36	0846	00:40:05	00:41:35	400	300	11	
005_FL35	0845	00:44:04	00:45:46	400	300	11	
006_FL34	0844	00:47:56	00:49:41	400	300	11	
007_FL33	0843	00:51:54	00:53:44	400	300	11	
008_FL32	0842	00:55:31	00:57:37	400	300	11	
009_FL31	0841	00:59:47	01:01:53	400	300	11	
010_FL30	0840	01:04:08	01:06:24	400	300	11	
011_FL29	0839	01:08:39	01:11:02	400	300	11	
012_FL28	8028	01:12:53	01:13:32	400	300	11	BAD: Eye safety
013_FL45	0855	01:20:43	01:21:34	400	300	11	
014_FL46	0856	01:23:41	01:24:44	400	300	11	
015_FL47	0857	01:26:47	01:27:55	400	300	11	
016_FL49	0859	01:29:57	01:34:00	400	300	11	
017_FL50	0860	01:35:47	01:39:57	400	300	11	
018_FL51	0861	01:42:02	01:45:27	400	300	11	
019_FL26	0836	01:49:40	01:51:54	400	300	11	
020_FL25	0835	01:53:54	01:56:11	400	300	11	
021_FL24	0834	01:57:57	02:00:25	400	300	11	
022_FL23	0833	02:02:20	02:04:40	400	300	11	
023_FL22	0832	02:07:33	02:10:05	400	300	11	
024_FL21	0831	02:11:52	02:14:11	400	300	11	
025_FL20	0830	02:18:11	02:20:33	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL80, BL81, QC62	**DATE:**	1 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	5-10 kts @ 100
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	22:14	**ENGINE OFF:**	2:41	**ENGINE TIME:**	04:27
TAKEOFF:	22:40	**LANDING:**	2:30	**AIR TIME**	03:50

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
026_FL19	0829	02:24:39	02:26:56	400	300	11	
		02:28:00					Ending Survey, clouds
		02:30:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL80, BL81	**DATE:**	2 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 60
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-03

ENGINE START:	17:06	**ENGINE OFF:**	20:17	**ENGINE TIME:**	03:11
TAKEOFF:	17:18	**LANDING:**	20:10	**AIR TIME**	02:52

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		17:18:00					Takeoff
		17:30:06					DS: BL81_20221202_173006
000_FL41	0851	17:30:06	17:31:18	400	300	11	
001_FL15	8015	17:33:56	17:34:18	400	300	11	BAD: Eye safety
		17:40:57					DS: BL81_20221202_174057
000_FL42	0852	17:40:57	17:41:27	400	300	11	BAD: Eye safety
001_FL42	0852	17:43:48	17:45:01	400	300	11	
002_FL43	0853	17:47:13	17:48:28	400	300	11	
003_FL44	0854	17:50:41	17:51:26	400	300	11	
004_FL1	0811	17:54:02	17:55:26	400	300	11	
005_FL4	0814	17:59:39	18:00:27	400	300	11	
006_FL5	0815	18:03:07	18:03:54	400	300	11	
007_FL6	0816	18:07:28	18:08:22	400	300	11	
008_FL7	0817	18:10:27	18:11:26	400	300	11	
009_FL8	0818	18:12:54	18:13:56	400	300	11	
010_FL9	0819	18:16:05	18:17:12	400	300	11	
011_FL10	0820	18:18:56	18:20:09	400	300	11	
012_FL11	0821	18:22:00	18:23:10	400	300	11	
013_FL12	0822	18:24:48	18:25:58	400	300	11	
014_FL13	0823	18:27:54	18:29:04	400	300	11	
015_FL14	0824	18:30:53	18:32:04	400	300	11	
016_FL18	0828	18:34:12	18:34:39	400	300	11	BAD: Eye safety
017_FL18	0828	18:38:42	18:40:33	400	300	11	
018_FL19	0829	18:42:37	18:45:07	400	300	11	
019_FL20	0830	18:46:59	18:49:22	400	300	11	
020_FL21	0831	18:51:38	18:54:10	400	300	11	
021_FL51	0861	18:55:15	18:59:24	400	300	11	
022_FL52	0862	19:01:29	19:06:08	400	300	11	
023_FL53	0863	19:07:59	19:12:30	400	300	11	
024_FL54	0864	19:15:09	19:19:41	400	300	11	
025_FL55	0865	19:21:52	19:22:41	400	300	11	BAD: Eye safety

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL80, BL81	**DATE:**	2 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 60
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-03

ENGINE START:	17:06	**ENGINE OFF:**	20:17	**ENGINE TIME:**	03:11
TAKEOFF:	17:18	**LANDING:**	20:10	**AIR TIME**	02:52

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
026_FL55	0865	19:26:19	19:30:39	400	300	11	
027_FL56	0866	19:33:08	19:33:47	400	300	11	
028_FL57	0867	19:36:01	19:36:44	400	300	11	
029_FL58	0868	19:39:50	19:40:33	400	300	11	
030_FL60	0870	19:42:27	19:43:05	400	300	11	
031_FL59	0869	19:44:55	19:45:36	400	300	11	
		19:46:00					Moved to block 80
		19:51:25					DS: BL80_20221202_195125
000_FL9	0747	19:51:25	19:52:08	400	300	11	Eye safe at end of line
001_FL18	0756	19:53:59	19:55:46	400	300	11	
002_FL39	0776	19:57:43	19:59:52	400	300	11	
003_FL59	0804	20:02:55	20:03:40	400	300	11	
		20:04:00					Ending Survey, blocks complete
		20:10:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL15, BL43, QC62	**DATE:**	2 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, OfuOlesega, Tau	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 50
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-05

ENGINE START:	20:34	**ENGINE OFF:**	2:07	**ENGINE TIME:**	05:33
TAKEOFF:	20:52	**LANDING:**	1:58	**AIR TIME**	05:06

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		20:52:00					Takeoff
		20:56:26					DS: QC62_20221202_205626
000_FL1	6201	20:56:26	20:58:06	400	300	11	
		21:22:28					DS: BL43_20221202_212228
000_FL36	4336	21:22:28	21:23:14	400	300	11	
001_FL1	4301	21:25:10	21:25:32	400	300	11	
002_FL1	4301	21:27:44	21:28:47	400	300	11	
003_FL2	4302	21:31:37	21:32:36	400	300	11	
004_FL3	4303	21:34:13	21:35:02	400	300	11	
005_FL4	4304	21:36:53	21:37:49	400	300	11	
006_FL5	4305	21:39:54	21:40:49	400	300	11	
007_FL6	4306	21:43:01	21:44:00	400	300	11	
		21:45:00					Moved to Tau Block 15
		21:50:18					DS: BL15_20221202_215018
000_FL1	1501	21:50:18	21:51:05	400	300	11	
001_FL2	1502	21:53:14	21:54:03	400	300	11	
002_FL3	1503	21:56:12	21:57:03	400	300	11	
003_FL4	1504	21:59:18	22:00:11	400	300	11	
004_FL9	1509	22:03:16	22:03:57	400	300	11	
005_FL10	1510	22:06:04	22:06:51	400	300	11	
006_FL11	1511	22:08:56	22:10:13	400	300	11	
007_FL12	1512	22:12:25	22:13:36	400	300	11	
008_FL13	1513	22:15:38	22:17:34	400	300	11	
009_FL14	1514	22:19:50	22:21:47	400	300	11	
010_FL15	1515	22:23:53	22:25:53	400	300	11	
011_FL16	1516	22:27:49	22:29:44	400	300	11	
012_FL17	1517	22:31:36	22:33:32	400	300	11	
013_FL18	1518	22:35:32	22:36:35	400	300	11	
014_FL19	1519	22:38:33	22:39:40	400	300	11	
015_FL20	1520	22:41:19	22:42:29	400	300	11	
016_FL21	1521	22:44:39	22:45:48	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL15, BL43, QC62	**DATE:**	2 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, OfuOlesega, Tau	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 50
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-05

ENGINE START:	20:34	**ENGINE OFF:**	2:07	**ENGINE TIME:**	05:33
TAKEOFF:	20:52	**LANDING:**	1:58	**AIR TIME**	05:06

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
017_FL22	1522	22:47:30	22:48:43	400	300	11	
018_FL23	1523	22:50:51	22:52:01	400	300	11	
019_FL24	1524	22:53:38	22:54:31	400	300	11	
020_FL25	1525	22:56:37	22:57:39	400	300	11	
021_FL26	1526	22:59:30	23:00:35	400	300	11	
022_FL27	1527	23:06:13	23:07:41	400	300	11	
023_FL28	1528	23:10:50	23:12:20	400	300	11	
024_FL29	1529	23:15:32	23:17:00	400	300	11	
025_FL30	1530	23:20:29	23:21:53	400	300	11	
026_FL31	1531	23:25:21	23:26:44	400	300	11	
027_FL32	1532	23:29:20	23:31:02	400	300	11	
028_FL33	1533	23:32:58	23:34:42	400	300	11	
029_FL34	1534	23:36:49	23:38:24	400	300	11	
030_FL35	1535	23:39:58	23:41:42	400	300	11	
031_FL36	1536	23:43:26	23:44:43	400	300	11	
032_FL37	1537	23:46:32	23:47:51	400	300	11	
033_FL38	1538	23:49:44	23:51:02	400	300	11	
034_FL5	1505	23:52:56	23:54:03	400	300	11	
035_FL6	1506	23:56:08	23:57:17	400	300	11	
036_FL7	1507	23:59:31	00:00:36	400	300	11	
037_FL8	1508	00:02:14	00:03:14	400	300	11	
038_FL39	1539	00:06:29	00:07:51	400	300	11	
039_FL40	1540	00:09:42	00:11:00	400	300	11	
		00:12:00					Moved to Ofu Block 43
		00:15:16					DS: BL43_20221203_001516
000_FL7	4307	00:15:16	00:16:24	400	300	11	
001_FL8	4308	00:18:24	00:19:35	400	300	11	
002_FL9	4309	00:21:43	00:22:38	400	300	11	
003_FL10	4310	00:24:08	00:25:13	400	300	11	
004_FL11	4311	00:27:52	00:28:48	400	300	11	
005_FL12	4312	00:31:40	00:32:29	400	300	11	BAD: Eye safety

WOOLPERT

FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL15, BL43, QC62	**DATE:**	2 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, OfuOlesega, Tau	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 50
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-05

ENGINE START:	20:34	**ENGINE OFF:**	2:07	**ENGINE TIME:**	05:33
TAKEOFF:	20:52	**LANDING:**	1:58	**AIR TIME**	05:06

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
006_FL13	4313	00:35:18	00:36:10	400	300	11	
007_FL14	4314	00:41:56	00:43:13	400	300	11	
008_FL15	4315	00:45:08	00:46:24	400	300	11	
009_FL16	4316	00:48:18	00:49:34	400	300	11	
010_FL17	4317	00:51:17	00:52:29	400	300	11	
011_FL18	4318	00:55:06	00:56:08	400	300	11	
012_FL19	4319	00:57:43	00:58:41	400	300	11	
013_FL20	4320	00:59:50	01:00:47	400	300	11	
014_FL22	4322	01:03:08	01:03:53	400	300	11	
015_FL23	4323	01:05:29	01:06:15	400	300	11	
016_FL24	4324	01:08:00	01:08:46	400	300	11	
017_FL25	4325	01:10:26	01:11:34	400	300	11	
018_FL26	4326	01:13:11	01:14:23	400	300	11	
019_FL27	4327	01:16:02	01:17:19	400	300	11	
020_FL28	4328	01:19:08	01:20:16	400	300	11	
021_FL29	4329	01:22:12	01:23:17	400	300	11	
022_FL30	4330	01:25:04	01:26:05	400	300	11	
023_FL31	4331	01:27:29	01:27:54	400	300	11	BAD: Eye safety
024_FL31	4331	01:30:07	01:31:15	400	300	11	
025_FL32	4332	01:32:48	01:33:53	400	300	11	
026_FL35	4335	01:35:41	01:36:41	400	300	11	
		01:37:00					Ending Survey, blocks complete
		01:58:00					Landing

WOOLPERT

FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL80, BL81, QC62	**DATE:**	5 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	5-10 kts @ 0
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-03

ENGINE START:	19:04	**ENGINE OFF:**	20:47	**ENGINE TIME:**	01:43
TAKEOFF:	19:19	**LANDING:**	20:37	**AIR TIME**	01:18

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		19:19:00					Takeoff
		19:23:49					DS: QC62_20221205_192349
000_FL1	6201	19:23:49	19:25:21	400	300	11	
		19:31:33					DS: BL80_20221205_193133
000_FL2	0740	19:31:33	19:32:18	400	300	11	
001_FL3	0741	19:34:11	19:34:58	400	300	11	
002_FL13	0751	19:35:20	19:36:20	400	300	11	
003_FL14	0752	19:38:16	19:39:32	400	300	11	
004_FL15	0753	19:41:17	19:42:47	400	300	11	
005_FL16	0754	19:44:47	19:46:27	400	300	11	
006_FL17	0755	19:48:37	19:50:21	400	300	11	
007_FL18	0756	19:52:33	19:54:30	400	300	11	
008_FL19	0757	19:56:31	19:58:27	400	300	11	
009_FL43	0780	20:00:18	20:01:09	400	300	11	BAD: Eye safety
010_FL43	0780	20:04:25	20:07:06	400	300	11	
011_FL44	0781	20:09:25	20:11:45	400	300	11	
012_FL45	0782	20:14:14	20:15:53	400	300	11	
		20:19:00					Moved to block 81
		20:19:53					DS: BL81_20221205_201953
000_FL2	0812	20:19:53	20:20:41	400	300	11	
001_FL3	0813	20:22:44	20:23:37	400	300	11	
002_FL22	0832	20:25:23	20:27:48	400	300	11	
003_FL48	0858	20:29:25	20:33:10	400	300	11	
		20:34:00					Ending Survey, blocks complete
		20:37:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL82, QC62	**DATE:**	6 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	15-20 kts @ 330
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-05

ENGINE START:	19:21	**ENGINE OFF:**	20:57	**ENGINE TIME:**	01:36
TAKEOFF:	19:35	**LANDING:**	20:47	**AIR TIME**	01:12

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		19:35:00					Takeoff
		19:39:43					DS: QC62_20221206_193943
000_FL1	6201	19:39:43	19:41:33	400	300	11	
		19:46:12					DS: BL82_20221206_194612
000_FL37	0877	19:46:12	19:47:12	400	300	11	
001_FL38	0878	19:49:21	19:50:41	400	300	11	
002_FL39	0879	19:52:29	19:53:47	400	300	11	
003_FL40	0880	19:56:10	19:57:37	400	300	11	
004_FL41	0881	19:59:20	20:00:41	400	300	11	
005_FL42	0882	20:02:42	20:04:08	400	300	11	
006_FL43	0883	20:05:43	20:07:08	400	300	11	
007_FL44	0884	20:09:29	20:11:03	400	300	11	
008_FL45	0885	20:13:02	20:14:25	400	300	11	
009_FL31	0871	20:17:04	20:18:55	400	300	11	
010_FL32	0872	20:20:57	20:22:55	400	300	11	
011_FL33	0873	20:24:49	20:26:46	400	300	11	
012_FL34	8234	20:28:53	20:30:14	400	300	11	BAD: Aborted, clouds
013_FL57	8257	20:34:15	20:34:52	400	300	11	BAD: Eye safety
014_FL1	8201	20:39:09	20:55:28	400	300	11	BAD:
		20:42:00					Ending Survey, clouds
		20:47:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL83, QC62	**DATE:**	8 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 0
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-04

ENGINE START:	19:22	**ENGINE OFF:**	0:08	**ENGINE TIME:**	04:46
TAKEOFF:	19:55	**LANDING:**	23:57	**AIR TIME**	04:02

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		19:55:00					Takeoff
		19:58:41					DS: QC62_20221208_195841
000_FL1	6201	19:58:41	20:00:25	400	300	11	
		20:04:04					DS: BL83_20221208_200404
000_FL63	963	20:04:04	20:05:18	400	300	11	
001_FL62	962	20:07:04	20:08:25	400	300	11	
002_FL61	961	20:10:03	20:11:41	400	300	11	
003_FL60	960	20:13:26	20:15:23	400	300	11	
004_FL59	959	20:16:53	20:19:06	400	300	11	
005_FL58	958	20:21:15	20:23:32	400	300	11	
006_FL57	957	20:25:05	20:29:19	400	300	11	
007_FL56	956	20:31:09	20:35:24	400	300	11	
008_FL55	955	20:36:55	20:41:07	400	300	11	
009_FL54	954	20:42:53	20:47:04	400	300	11	
010_FL53	953	20:48:48	20:53:06	400	300	11	
011_FL52	952	20:55:08	20:59:11	400	300	11	
012_FL51	951	21:00:47	21:04:48	400	300	11	
013_FL50	950	21:07:00	21:10:52	400	300	11	
014_FL49	949	21:12:31	21:16:12	400	300	11	
015_FL48	948	21:18:20	21:21:58	400	300	11	
016_FL38	938	21:23:45	21:26:03	400	300	11	
017_FL37	937	21:27:50	21:30:04	400	300	11	
018_FL36	936	21:31:57	21:34:06	400	300	11	
019_FL34	934	21:37:45	21:41:28	400	300	11	
020_FL33	933	21:43:19	21:46:42	400	300	11	
021_FL39	939	21:50:07	21:51:47	400	300	11	
022_FL40	940	21:53:28	21:55:21	400	300	11	
023_FL41	941	21:57:10	21:59:01	400	300	11	
024_FL42	942	22:00:55	22:02:46	400	300	11	
025_FL43	943	22:04:45	22:06:35	400	300	11	
026_FL18	918	22:08:41	22:10:00	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL83, QC62	**DATE:**	8 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 0
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-04

ENGINE START:	19:22	**ENGINE OFF:**	0:08	**ENGINE TIME:**	04:46
TAKEOFF:	19:55	**LANDING:**	23:57	**AIR TIME**	04:02

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
027_FL19	919	22:12:04	22:13:26	400	300	11	
028_FL44	944	22:15:10	22:16:25	400	300	11	
029_FL45	945	22:18:21	22:19:37	400	300	11	
030_FL46	946	22:21:36	22:22:52	400	300	11	
031_FL47	947	22:24:39	22:25:56	400	300	11	
032_FL11	911	22:29:16	22:29:59	400	300	11	
033_FL12	912	22:31:58	22:32:51	400	300	11	
034_FL13	913	22:35:05	22:35:59	400	300	11	
035_FL14	914	22:37:42	22:38:55	400	300	11	
036_FL20	920	22:39:59	22:40:42	400	300	11	
037_FL21	921	22:42:50	22:43:36	400	300	11	
038_FL22	922	22:45:36	22:46:19	400	300	11	
039_FL23	923	22:48:20	22:49:12	400	300	11	
040_FL24	924	22:51:10	22:51:54	400	300	11	
041_FL25	925	22:53:56	22:54:44	400	300	11	
042_FL28	928	22:56:49	22:57:55	400	300	11	
043_FL29	929	23:00:57	23:01:35	400	300	11	
044_FL30	930	23:03:01	23:03:49	400	300	11	
045_FL31	931	23:05:55	23:06:43	400	300	11	
046_FL32	932	23:08:22	23:09:05	400	300	11	
047_FL35	935	23:09:40	23:11:57	400	300	11	
048_FL27	927	23:13:17	23:14:05	400	300	11	
049_FL26	916	23:16:11	23:17:08	400	300	11	
050_FL17	917	23:18:36	23:19:28	400	300	11	
051_FL16	916	23:21:35	23:22:25	400	300	11	
052_FL15	915	23:23:59	23:24:50	400	300	11	
053_FL10	910	23:25:58	23:26:44	400	300	11	
054_FL9	909	23:28:52	23:29:42	400	300	11	
055_FL8	908	23:32:40	23:33:22	400	300	11	
056_FL7	907	23:36:12	23:36:53	400	300	11	
057_FL6	906	23:39:14	23:39:59	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL83, QC62	**DATE:**	8 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.
MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 0
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-04

ENGINE START:	19:22	**ENGINE OFF:**	0:08	**ENGINE TIME:**	04:46
TAKEOFF:	19:55	**LANDING:**	23:57	**AIR TIME**	04:02

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
058_FL5	905	23:42:00	23:42:48	400	300	11	
059_FL4	904	23:45:35	23:46:17	400	300	11	
060_FL3	903	23:47:46	23:48:30	400	300	11	
061_FL2	902	23:49:53	23:50:36	400	300	11	
062_FL1	901	23:53:29	23:54:12	400	300	11	
		23:55:00					Ending Survey, clouds
		23:57:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL02, QC62	**DATE:**	10 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 100
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	17:11	**ENGINE OFF:**	20:27	**ENGINE TIME:**	03:16
TAKEOFF:	17:45	**LANDING:**	20:18	**AIR TIME**	02:33

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF	TOPO PWR	REMARKS
		17:45:00					Takeoff
		17:49:25					DS: QC62_20221210_174925
000_FL1	6201	17:49:25	17:51:05	400	300	11	
		17:54:19					DS: BL02_20221210_175419
000_FL8	0208	17:54:19	17:54:25	400	300	11	BAD: Eye safety
001_FL10	0210	17:59:57	18:00:02	400	300	11	BAD: Eye safety
002_FL11	0211	18:02:26	18:03:29	400	300	11	
003_FL12	0212	18:05:23	18:06:20	400	300	11	
004_FL13	0213	18:08:35	18:09:21	400	300	11	
005_FL44	0244	18:10:34	18:11:32	400	300	11	
006_FL24	0224	18:13:30	18:14:23	400	300	11	
007_FL18	0218	18:16:47	18:17:34	400	300	11	
008_FL26	0226	18:18:51	18:19:34	400	300	11	
009_FL50	0250	18:21:18	18:22:39	400	300	11	
010_FL48	0248	18:24:44	18:25:34	400	300	11	
011_FL6	0206	18:28:42	18:29:24	400	300	11	
012_FL38	0238	18:30:54	18:31:42	400	300	11	
013_FL23	0223	18:33:21	18:34:14	400	300	11	
014_FL19	0219	18:35:48	18:36:33	400	300	11	
015_FL22	0222	18:38:18	18:39:08	400	300	11	
016_FL30	0230	18:40:32	18:40:56	400	300	11	BAD: Eye safety
017_FL40	0240	18:43:20	18:44:04	400	300	11	
018_FL49	0249	18:46:47	18:47:42	400	300	11	
019_FL4	0204	18:49:20	18:49:59	400	300	11	
020_FL46	0246	18:51:49	18:52:46	400	300	11	
021_FL21	0221	18:53:46	18:54:35	400	300	11	
022_FL25	0225	18:56:57	18:57:43	400	300	11	
023_FL36	0236	18:58:08	18:58:59	400	300	11	
024_FL43	0243	19:00:55	19:01:45	400	300	11	
025_FL33	0233	19:04:03	19:04:43	400	300	11	
026_FL51	0251	19:06:18	19:07:16	400	300	11	

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL02, QC62	**DATE:**	10 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	10-15 kts @ 100
LIDAR DRIVE:	HE4X-06	**RCD DRIVE:**	RCD-03

ENGINE START:	17:11	**ENGINE OFF:**	20:27	**ENGINE TIME:**	03:16
TAKEOFF:	17:45	**LANDING:**	20:18	**AIR TIME**	02:33

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
027_FL35	0235	19:08:17	19:08:32	400	300	11	BAD: Eye safety
028_FL20	0220	19:11:25	19:12:16	400	300	11	
029_FL14	0214	19:16:36	19:17:32	400	300	11	
030_FL15	0215	19:20:28	19:21:26	400	300	11	
031_FL16	0216	19:24:43	19:25:38	400	300	11	Light rain
032_FL17	0217	19:28:46	19:29:40	400	300	11	
033_FL37	0237	19:31:09	19:31:56	400	300	11	
034_FL27	0227	19:32:58	19:33:13	400	300	11	
035_FL29	0229	19:38:42	19:39:35	400	300	11	
036_FL28	0228	19:42:20	19:43:14	400	300	11	BAD: Eye safety
037_FL41	0241	19:47:47	19:48:33	400	300	11	
038_FL42	0242	19:50:35	19:51:24	400	300	11	
039_FL31	0231	19:53:39	19:54:30	400	300	11	
040_FL32	0232	19:56:05	19:56:53	400	300	11	
041_FL34	0234	19:59:50	20:01:00	400	300	11	
042_FL39	0239	20:04:18	20:05:09	400	300	11	
043_FL7	0207	20:07:47	20:08:27	400	300	11	
044_FL45	0245	20:09:23	20:10:18	400	300	11	
045_FL47	0247	20:11:53	20:12:49	400	300	11	
046_FL5	0205	20:15:10	20:16:01	400	300	11	
		20:17:00					Ending Survey, clouds
		20:18:00					Landing

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL02, QC62	**DATE:**	12 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	Calm @ 0
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-04

ENGINE START:	17:11	**ENGINE OFF:**	19:30	**ENGINE TIME:**	02:19
TAKEOFF:	17:41	**LANDING:**	19:23	**AIR TIME**	01:42

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
		17:41:00					Takeoff
		17:46:11					DS: QC62_20221212_174611
000_FL1	6201	17:46:11	17:47:45	400	300	11	
		17:52:27					DS: BL02_20221212_175227
000_FL74	0274	17:52:27	17:53:06	400	300	11	
001_FL52	0252	17:55:27	17:56:43	400	300	11	
002_FL53	0253	17:58:41	18:00:04	400	300	11	
003_FL54	0254	18:01:47	18:03:09	400	300	11	
004_FL75	0275	18:05:04	18:05:42	400	300	11	
005_FL76	0276	18:07:58	18:08:37	400	300	11	
006_FL77	0277	18:10:40	18:11:17	400	300	11	
007_FL59	0259	18:13:46	18:14:35	400	300	11	
008_FL57	0257	18:16:44	18:17:32	400	300	11	
009_FL58	0258	18:20:13	18:20:53	400	300	11	
010_FL60	0260	18:22:39	18:23:30	400	300	11	Climbed at end, terrain
011_FL61	0261	18:25:37	18:26:27	400	300	11	
012_FL62	0262	18:28:32	18:29:25	400	300	11	
013_FL63	0263	18:31:55	18:32:47	400	300	11	
014_FL64	0264	18:34:51	18:35:54	400	300	11	
015_FL65	0265	18:39:09	18:40:02	400	300	11	
016_FL66	0266	18:42:10	18:43:09	400	300	11	
017_FL67	0267	18:46:16	18:47:08	400	300	11	
018_FL68	0268	18:48:57	18:49:38	400	300	11	
019_FL69	0269	18:51:52	18:52:37	400	300	11	
020_FL70	0270	18:54:56	18:55:40	400	300	11	
021_FL71	0271	18:57:49	18:58:35	400	300	11	
022_FL72	0272	19:01:38	19:02:20	400	300	11	
023_FL73	0273	19:04:22	19:05:04	400	300	11	
024_FL56	0256	19:06:52	19:08:17	400	300	11	
025_FL55	0255	19:10:12	19:11:35	400	300	11	
		19:16:57					DS: BL02_20221212_191657

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FLIGHT LOG

PROJECT NAME:	2022-10010368_NOAA_AmericanSamoa	**BASE AIRPORT:**	Pago Pago (PPG)
LOCATION / AREA:	AmericanSamoa / BL02, QC62	**DATE:**	12 December 2022
AIRCRAFT:	ZK-XLF	**PILOT:**	Jabin L.
SYSTEM:	Hawkeye 4X	**OPERATOR:**	Paul R.

MISSION ID:	AmericanSamoa, Tutuila	**CLOUDS:**	Clouds @ 2000ft
BASE STATION:	PPP	**WIND:**	Calm @ 0
LIDAR DRIVE:	HE4X-05	**RCD DRIVE:**	RCD-04

ENGINE START:	17:11	**ENGINE OFF:**	19:30	**ENGINE TIME:**	02:19
TAKEOFF:	17:41	**LANDING:**	19:23	**AIR TIME**	01:42

FL #	LINE #	START TIME	END TIME	ALTITUDE	TOPO PRF | PWR		REMARKS
000_FL45	0245	19:16:57	19:17:31	400	300	11	BAD: Line aborted, clouds
		19:18:00					Ending Survey, clouds
		19:23:00					Landing

8.2 Trajectory Processing Log

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TRAJECTORY PROCESSING

PROJECT NAME: 2022-10010368_NOAA_AmericanSamoa
LOCATION: Pago Pago, American Samoa
AIRCRAFT: Cessna Reims 406 (ZK-XLF)
SYSTEM: Hawkeye 4x

Project Name	Download Airborne Data	Create IE Project Directory	Copy Data to IE Project /Raw	Run Project Wizard	Base Station			Check Base Coordinate & Datum	Check Lever Arms	Process Time Window		Process TC	Review QC Plots	Separation			Solution Status	Comments
					Station ID	Receiver Type	Antenna (ARP) Height (m)			Start Time (GPS Week Time)	End Time (GPS Week Time)			East RMS (m)	North RMS (m)	Up RMS (m)		
2022-10-18A_CH4X	AB	AB	AB	AB	PAG1	R10	2.100	AB	AB	-	-	AB	AB	0.009	0.008	0.022	Final	Tutuila Production (Multipass)
2022-10-18A_HE4X	AB	AB	AB	AB	PAG1	R10	2.100	AB	AB	-	-	AB	AB	0.009	0.009	0.021	Final	Tutuila Production (Multipass)
2022-10-19A_CH4X	AB	AB	AB	AB	PAG1	R10	2.100	AB	AB	-	334304	AB	AB	0.018	0.005	0.057	Final	QC Line (Multipass)
2022-10-19A_HE4X	AB	AB	AB	AB	PAG1	R10	2.100	AB	AB	-	334304	AB	AB	0.018	0.005	0.043	Final	QC Line (Multipass)
2022-10-19B_CH4X	AB	AB	AB	AB	PAG1	R10	2.100	AB	AB	335077	-	AB	AB	0.023	0.010	0.037	Final	Tutuila Production (Multipass)
2022-10-19B_HE4X	AB	AB	AB	AB	PAG1	R10	2.100	AB	AB	335077	-	AB	AB	0.021	0.009	0.034	Final	Tutuila Production (Multipass)
2022-10-20A_CH4X	AB	AB	AB	AB	PAG1	R10	2.100	AB	AB	-	-	AB	AB	0.012	0.016	0.021	Final	Tutuila Production (Multipass)
2022-10-20A_HE4X	AB	AB	AB	AB	PAG1	R10	2.100	AB	AB	-	-	AB	AB	0.013	0.016	0.028	Final	Tutuila Production (Multipass)
2022-10-21A_CH4X	AB	AB	AB	AB	PPP	N/A	-	AB	AB	-	-	AB	AB	0.036	0.020	0.093	Final	Rose, Tau, Seamount Production
2022-10-21A_HE4X	AB	AB	AB	AB	PPP	N/A	-	AB	AB	-	-	AB	AB	0.049	0.031	0.126	Final	Rose, Tau, Seamount Production
2022-10-22A_CH4X	AB	AB	AB	AB	PPP	N/A	-	AB	AB	-	-	AB	AB	0.014	0.017	0.068	Final	Tau and OfuOlesega Production
2022-10-22A_CH4X	AB	AB	AB	AB	PPP	N/A	-	AB	AB	-	-	AB	AB	0.018	0.017	0.072	Final	Tau and OfuOlesega Production
2022-10-28A_CH4X	AB	AB	AB	AB	PAG1	N/A	2.100	AB	AB	-	-	AB	AB	0.013	0.009	0.022	Final	Tutuila Production
2022-10-28A_HE4X	AB	AB	AB	AB	PAG1	N/A	2.100	AB	AB	-	-	AB	AB	0.010	0.008	0.023	Final	Tutuila Production
2022-10-29A_CH4X	AB	AB	AB	AB	PPP	N/A	-	AB	AB	-	-	AB	AB	0.013	0.015	0.104	Final	Swains Production (20 degree elevation mask)
2022-10-29A_HE4X	AB	AB	AB	AB	PPP	N/A	-	AB	AB	-	-	AB	AB	0.016	0.021	0.101	Final	Swains Production (20 degree elevation mask)
2022-10-29B_CH4X	AB	AB	AB	AB	PAG1	R10	2.100	AB	AB	-	-	AB	AB	0.007	0.004	0.022	Final	Tutuila Production
2022-10-29B_HE4X	AB	AB	AB	AB	PAG1	R10	2.100	AB	AB	-	-	AB	AB	0.006	0.004	0.019	Final	Tutuila Production
2022-10-30A_CH4X	AB	AB	AB	AB	PPP	N/A	-	AB	AB	-	-	AB	AB	0.017	0.012	0.032	Final	Tau and OfuOlesega Production
2022-10-30A_HE4X	AB	AB	AB	AB	PPP	N/A	-	AB	AB	-	-	AB	AB	0.018	0.009	0.060	Final	Tau and OfuOlesega Production
2022-11-01A_CH4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.091	0.065	0.142	Final	OfuOlesega Production
2022-11-01A_HE4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.066	0..042	0.108	Final	OfuOlesega Production
2022-11-02A_CH4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.022	0.024	0.060	Final	OfuOlesega and Tau Production
2022-11-02A_HE4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.018	0.031	0.097	Final	OfuOlesega and Tau Production
2022-11-03A_CH4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.063	0.024	0.101	Final	Tutuila Reflights

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TRAJECTORY PROCESSING

PROJECT NAME: 2022-10010368_NOAA_AmericanSamoa
LOCATION: Pago Pago, American Samoa
AIRCRAFT: Cessna Reims 406 (ZK-XLF)
SYSTEM: Hawkeye 4x

Project Name	Download Airborne Data	Create IE Project Directory	Copy Data to IE Project /Raw	Run Project Wizard	Base Station			Check Base Coordinate & Datum	Check Lever Arms	Process Time Window		Process TC	Review QC Plots	Separation			Solution Status	Comments
					Station ID	Receiver Type	Antenna (ARP) Height (m)			Start Time (GPS Week Time)	End Time (GPS Week Time)			East RMS (m)	North RMS (m)	Up RMS (m)		
2022-11-03A_HE4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.026	0.011	0.074	Final	Tutuila Reflights
2022-11-05A_CH4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.009	0.008	0.029	Final	Tutuila Reflights
2022-11-05A_HE4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.010	0.008	0.028	Final	Tutuila Reflights
2022-11-09A_CH4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.034	0.021	0.040	Final	Tau Reflights
2022-11-09A_HE4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.028	0.023	0.034	Final	Tau Reflights
2022-11-10A_CH4X	PR	PR	PR	PR	PAG2	R10	-	PR	PR	-	-	PR	PR	0.012	0.010	0.039	Final	Tutulia Topo Production
2022-11-10A_HE4X	PR	PR	PR	PR	PAG2	R10	-	PR	PR	-	-	PR	PR	0.012	0.010	0.039	Final	Tutulia Topo Production
2022-11-11A_CH4X	AS	AS	AS	AS	PPP	N/A	-	AS	AS	-	-	AS	AS	0.057	0.021	0.049	Final	Tutulia Topo Production
2022-11-11A_HE4X	AS	AS	AS	AS	PPP	N/A	-	AS	AS	-	-	AS	AS	0.054	0.022	0.054	Final	Tutulia Topo Production
2022-11-11B_CH4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.030	0.022	0.088	Final	OfuOlesega and Tau Production and Reflights
2022-11-11B_HE4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.035	0.023	0.096	Final	OfuOlesega and Tau Production and Reflights
2022-11-12A_CH4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.012	0.010	0.021	Final	Tutuila Reflights
2022-11-12A_HE4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.012	0.009	0.022	Final	Tutuila Reflights
2022-11-13A_CH4X	PR	PR	PR	PR	PAG2	R10	-	PR	PR	-	-	PR	PR	0.010	0.010	0.040	Final	Tutuila Production and Reflights
2022-11-13A_HE4X	PR	PR	PR	PR	PAG2	R10	-	PR	PR	-	-	PR	PR	0.009	0.011	0.038	Final	Tutuila Production and Reflights
2022-11-13B_CH4X	PR	PR	PR	PR	PAG2	R10	-	PR	PR	-	-	PR	PR	0.012	0.013	0.028	Final	OfuOlesega Reflights
2022-11-13B_HE4X	PR	PR	PR	PR	PAG2	R10	-	PR	PR	-	-	PR	PR	0.012	0.014	0.044	Final	OfuOlesega Reflights
2022-11-18A_CH4X	PR	PR	PR	PR	PAG2	R10	-	PR	PR	-	-	PR	PR	0.010	0.010	0.021	Final	Tutuila Production
2022-11-18A_HE4X	PR	PR	PR	PR	PAG2	R10	-	PR	PR	-	-	PR	PR	0.013	0.014	0.029	Final	Tutuila Production
2022-11-21A_CH4X	PR	PR	PR	PR	PAG2	R10	-	PR	PR	-	-	PR	PR	0.016	0.015	0.024	Final	Tutuila Production
2022-11-21A_HE4X	PR	PR	PR	PR	PAG2	R10	-	PR	PR	-	-	PR	PR	0.019	0.013	0.027	Final	Tutuila Production
2022-11-22A_CH4X	PR	PR	PR	PR	PAG2	R10	-	PR	PR	-	-	PR	PR	0.013	0.007	0.014	Final	Tutuila Reflights
2022-11-22A_HE4X	PR	PR	PR	PR	PAG2	R10	-	PR	PR	-	-	PR	PR	0.014	0.009	0.017	Final	Tutuila Reflights
2022-11-25A_CH4X	PR	PR	PR	PR	PAG2	R10	-	PR	PR	-	-	PR	PR	0.012	0.007	0.034	Final	Tutuila Production
2022-11-25A_HE4X	PR	PR	PR	PR	PAG2	R10	-	PR	PR	-	-	PR	PR	0.005	0.004	0.022	Final	Tutuila Production

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TRAJECTORY PROCESSING

PROJECT NAME: 2022-10010368_NOAA_AmericanSamoa
LOCATION: Pago Pago, American Samoa
AIRCRAFT: Cessna Reims 406 (ZK-XLF)
SYSTEM: Hawkeye 4x

Project Name	Download Airborne Data	Create IE Project Directory	Copy Data to IE Project /Raw	Run Project Wizard	Base Station			Check Base Coordinate & Datum	Check Lever Arms	Process Time Window		Process TC	Review QC Plots	Separation			Solution Status	Comments
					Station ID	Receiver Type	Antenna (ARP) Height (m)			Start Time (GPS Week Time)	End Time (GPS Week Time)			East RMS (m)	North RMS (m)	Up RMS (m)		
2022-11-29A_CH4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.036	0.023	0.026	Final	Tutulia Topo Production
2022-11-29A_HE4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.034	0.028	0.036	Final	Tutulia Topo Production
2022-11-30A_CH4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.022	0.016	0.037	Final	Tutulia Topo Production
2022-11-30A_HE4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.010	0.015	0.026	Final	Tutulia Topo Production
2022-12-01B_CH4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.011	0.010	0.040	Final	Tutulia Topo Production
2022-12-01B_HE4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.013	0.009	0.034	Final	Tutulia Topo Production
2022-12-02A_CH4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.009	0.008	0.044	Final	Tutulia Topo Production
2022-12-02A_HE4X	PR	PR	PR	PR	PPP	N/A	-	PR	PR	-	-	PR	PR	0.010	0.009	0.043	Final	Tutulia Topo Production
2022-12-02B_CH4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.011	0.006	0.030	Final	Tau and OfuOlesega Topo Production
2022-12-02B_HE4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.012	0.007	0.032	Final	Tau and OfuOlesega Topo Production
2022-12-05A_CH4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.016	0.010	0.028	Final	Tutulia Topo Reflight
2022-12-05A_HE4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.029	0.011	0.018	Final	Tutulia Topo Reflight
2022-12-06A_CH4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.017	0.015	0.018	Final	Tutulia Topo Reflight
2022-12-06A_HE4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.023	0.017	0.028	Final	Tutulia Topo Reflight
2022-12-08B_CH4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.013	0.010	0.035	Final	Tutulia Topo Reflight
2022-12-08B_HE4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	N/A	N/A	N/A	Final	Tutulia Topo Reflight
2022-12-10A_CH4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.008	0.010	0.027	Final	Tutulia Topo Reflight
2022-12-10A_HE4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	N/A	N/A	N/A	Final	Tutulia Topo Reflight
2022-12-10A_CH4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.006	0.009	0.024	Final	Tutulia Topo Reflight
2022-12-10A_HE4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.007	0.010	0.033	Final	Tutulia Topo Reflight
2022-12-12A_CH4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.006	0.009	0.024	Final	Tutulia Topo Reflight
2022-12-12A_HE4X	PR	PR	PR	PR	PAG2	R10	2.100	PR	PR	-	-	PR	PR	0.007	0.010	0.033	Final	Tutulia Topo Reflight