NOAA P-3 N42RF
Atmospheric Rivers
Mission 1

Flight ID: 050324H

Sensor or system	Number or Name
INE	1
Accelerometer	1
Temperature Probe	1
Dew Point Probe	1 (General Eastern)
Altitude (for vertical wind)	Radar Altimeter 159
Static Pressure	Rosemount Fuselage
Dynamic Pressure	Rosemount Fuselage 1281
Time Source	Micro 99
Constants File	CO2052.CON

Notes:

There were three time/data gaps during this flight. These occurred between 212909Z-212920Z, 213301Z-213320Z, and from 041351Z-041400Z.

The dynamic slip pressure (PDSF) from the lower fuselage indicated values that were inverted from that of the dynamic slip pressure from the radome (PDSR) from 204601Z-211600Z. This discrepancy occurred while the aircraft was climbing. The pitch angle was around 8 degrees and the roll was around 6 degrees during this time period. No corrections were made to the data.

Spikes in radar altimeter 159 and 232 from 211346Z-211703Z are the result of flying over the island of Kauai..

Spikes in dewpoint sensor number one were corrected from 012724Z-013000Z and from 013135Z-013530Z in order to keep relative humidity values below 100%.

Dewpoint sensor number two exhibited rhythmic oscillations throughout the flight.

The King Liquid Water sensor was inoperative throughout the flight.

The aircraft INE positions were re-navigated with respect to GPS.

SPECIAL NOTE!!! Locations 80, 81 and 82 of record five on the standard tape contain vertical ground, vertical air and vertical speeds, respectively, computed using Dave Jorgensen's vertical wind algorithm.
It is recommended that these values be used for vertical wind analysis.

	Takeoff	**Landing**
Aircraft Static Pressure	1018.4 mb	1015.4 mb
Corrected Tower Pressure	1018.3 mb	1014.9 mb

Flight Director: Martin Mayeaux (813) 828-3310 ext. 3086

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Flt ID: 050324H	From: PHNL	To: PHNL
Flt. No: 05-016	Blk In: 0443 Z	Time On: 0433 Z
ETD: 2100 Z	Blk Out: 2038 Z	Time Off: 2049 Z
ETE: 9+00	Blk Time: 8+05 (8.1) Hrs	Flt Time: 7+44 (7.7) Hrs
Sponsoring Org: NOAA/ETL	Program: Atmospheric Rivers	Purpose: IOP 3

AOC Flight Crew

Aircraft Commander: Strong ✓	Data System: Delgado ✓
Co-Pilot: Choy ✓ /	AVAPS: Mcmillan ✓
Navigator: Gallagher ✓ / Siegel ✓	System Eng:
Flight Eng: Floyd ✓ /	A A:
Flight Director: Mayeaux ✓ /	A A:
Avionics: Rogers ✓	Crew Chief:

Participating Scientists / Visitors

Name (Last, First)	Activity on Aircraft	Affiliation
Jorgenson ✓	PI	NSSL
Shepherd, T ✓	obs	AOC
Kingsmill, D ✓	sci	~~Noaa/ETL~~ NSSL

Remarks (Storm Name, Mission ID, Recco Times, Fix Times) *Recco Times* *Fix # Fix Time*

Storm Name:

Mission ID:

Penetration number and time

(See reverse for additional remarks)

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Flight ID: 050324H	Time Off: ~~2019~~ 2049Z	Time On: 0433 Z

	A/C Takeoff	Wx Station Takeoff	A/C Land	Wx Station Land
Pressure	1018.4 mb	3007 (1018.3) mb	1015.4 mb	2997 (1014.9) mb

ATIS	Time	Observation
Takeoff	1853 Z	29004KT 10SM SKC 26/19 3007
Land	0353 Z	22007KT 9SM FEW075 26/20 2997

	Number	Data Disposition / Date / Quality
Flight Level Tapes	2	
Radar Tapes	1	
Cloud Physics Tapes / CDs		
Video Tapes		
Dropsondes	44	Good: 42 Bad: 2
AXBT		
AXCP		
AXCTD		

Remarks:

Radar is broken from takeoff (LF + Tail)

Time glitch 2133

Inertial 2 out to 1 and

Rock 813 760 4771

Navy 813 833 2872

Flight ID: 050324H

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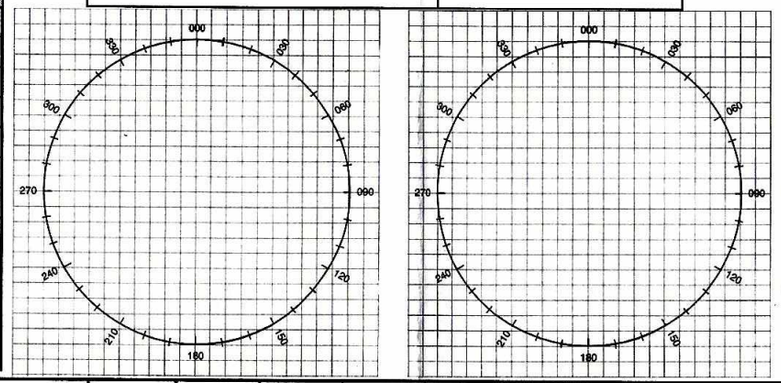
Form 413-30

Time	Lat	Long	Trk	Hdg	Wind Dir	Wind Spd	T_a	T_d	Press. Alt	Geo. Alt	Sfc Press.	Press. Sfc	Dyn. Press	Remarks
Next Drop Time														
212800	2								22			80	22	004000
213500	3												23	005200
214200	4												24	005800
214900	5												25	010300
215600	6												26	010800
220300	7												27	011300
221000	8												28	011900 6 mins
221700	9												29	012500
222400	10												30	013100
223100	11												31	013700
223800	12												32	014300
224500	13												33	014900
225200	14												34	015500
225900	15	3045											35	020100
230600	16	2345											36	020700
231300	17	1645											37	021300
232000	18	0945 → Drop											38	021900
232700	19	0245	Skip - Drop at PL										39	022500 6
233400	20												40	023100 6

IND + 4×ALT/1000 380

CLEARANCES			
FREQ	ALT	HDG	OTHER
			ICELDA 2, LIHUE Trans L 220 ↗ 5000
			118.3 SQ 3751
			BLOCK 16 Thousand FL 220
			OBS NMC and Flight Planned Positions

MISSION LOG PAGE ___ OF ___



POSITION REPORT
1. POSITION
2. TIME
3. ALTITUDE
4. NEXT POSITION
5. ETA
6. NEXT POSITION

EMERGENCY MESSAGE

TRANSMIT THE FOLLOWING MESSAGE TO ANY AGENCY ON THE AIR-GROUND FREQUENCY IN USE. IF UNABLE TO ESTABLISH COMMS, ATTEMPT CONTACT ON ANY OF THE FOLLOWING EMERGENCY FREQUENCIES:

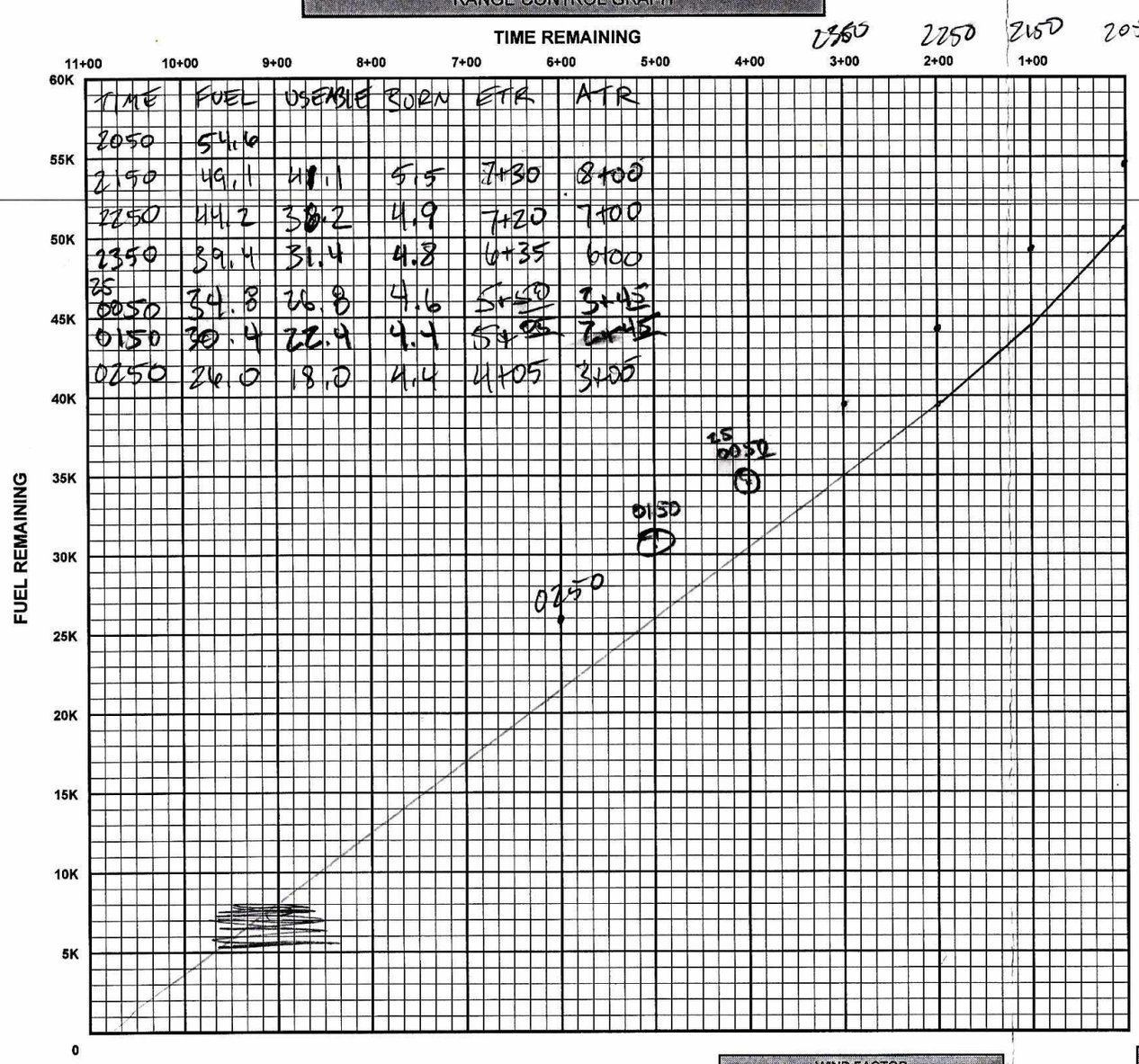
UHF/VOICE	VHF/VOICE	MF/VOICE	HF/CW	MF/CW
243.0	121.5	2182 KHZ	8364 KHZ	500 KHZ

MAYDAY, MAYDAY, MAYDAY
THIS IS NOAA _____, NOAA _____, NOAA 42

- POSITION _____ N/S _____ E/W AT _____Z
- HEADING _____ TRUE/MAG
- AT _____ KTS TRUE/INDICATED
- FLIGHT LEVEL OR ALTITUDE _____
- WE ARE A P-3 AIRCRAFT WITH 12 SOULS ON BOARD
- NATURE OF EMERGENCY
- ASSISTANCE DESIRED
- PILOT INTENTIONS
- WE HAVE _____ ENDURANCE REMAINING

TIME	FIX TYPE	POSITION	INS 1 POSITION	K ERR	INS 2 POSITION	K ERR	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
START 2028 / TAXI 2038																					
BLOCK 2038 / T/O 2049																					
2053	×✓	21 13.5 / 158 04.8	21 13.5 / 158 04.9	0 / -.1	21 13.3 / 158 04.5	+.2 / +.3	259	11E	270	2R	272	193	249	21	↗160	213					239/10
BLK 16 Thou FL 220 2200	⚠	24 17.8 / 161 50.4	24 18.9 / 161 49.1	-.9 / +1.3	24 18.5 / 161 51.2	-.7 / -.8	290	11E	301	8R	309	254	223	35	180	261	2				OBS NMC ✓
BLK 16 Thou FL 220 2300	⚠	26 50.6 / 165 23.7	26 51.4 / 165 21.5	-.8 / +2.2	26 50.9 / 165 23.4	-.3 / +1.3	284	12E	296	11R	307	233	245	57	200	269	2				13500, 17904, 21985, 6532 ✓
BLK 16 Thou FL 220 25 0000	⚠	29 55.2 / 164 56.8	29 54.2 / 164 54.9	+1.0 / +1.9	29 53.3 / 164 55.4	+1.9 / +1.4	027	12E	039	9R	048	388	249	122	220	277	3				✓
0100	⚠	30-06.3 / 159-42.5	30-04.3 / 159-39.6	+2.0 / +2.9	30-02.9 / 159-42.8	+3.4 / -.3	133	12E	145	16L	129	318	255	94	FL220	279	4	616	1+57	0257	
0200	⚠	26-44.8 / 155-58.2	26-41.3 / 155-05.3	+3.5 / +2.9	26-39.5 / 155-09.8	+5.3 / -1.7	132	12E	144	11L	132	308	247	61	FL220	288	4	280	+54	0257	
0300	⚠	23 17.7 / 151 01.0	23 13.8 / 151 00.5	+3.9 / +.5	2308.7 / 151 04.2	+9.0 / -3.2	239	12E	251	2R	253	277	215	17	220	291	BIMBO			0420	✓
T 2947 22/20 0400	⚠	21 54.5 / 155 54.2	21 51.4 / 155 53.0	+3.1 / +1.2	21 44.4 / 155 58.8	+10.1 / +4.6	238	11E	249	6IR	253	289	202	25	↘200	294	BIMBO			0421	
0434	LAND	21 18.4 / 157 55.4	21 15.2 / 157 54.3	+3.2 / +1.1	21 08.3 / 158 00.3	+10.1 / -4.9															

RANGE CONTROL GRAPH



ETP = .5(TOTAL DISTANCE x OUTBOUND WIND FACTOR)

WIND FACTOR		
WINDSPEED	HEADWIND	TAILWIND
10	1.03	.97
20	1.06	.94
30	1.10	.92
40	1.14	.89
50	1.18	.87
60	1.22	.85

ENROUTE FUEL	
ENROUTE TIME	9+00
ENROUTE FUEL (6K, 5K,4.5K RULE)	42.5
RESERVE AT DESTINATION	8.0
REQUIRED RAMP	50.5
ACTUAL RAMP FUEL	54.6

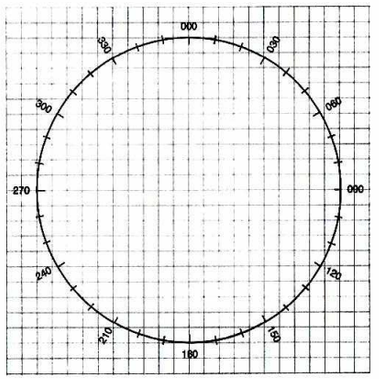
TACTICAL (OFFSTA TO DESTINATION)	4 ENG	3 ENG
DISTANCE (OFFSTA TO DEST)		
ENROUTE TIME (OFFSTA TO DEST)		
BURN RATE (LBS/HR)	4500	5500
ENROUTE FUEL REQUIRED		
RESERVE AT DESTINATION		
FUEL AT OFFSTA		

POINT OF SAFE RETURN	4 ENG	3 ENG
ETP DISTANCE (TO DEPARTURE)		
ENROUTE TIME (TO DEPARTURE)		
BURN RATE (LBS/HR)	4500	5500
FUEL REQUIRED		
RESERVE AT DEPARTURE		
PSR FUEL		

CEX - TRUE BEARING METHOD	INS1	INS2	WET
COMPASS TYPE			
MCH (READING)			
- MTH (SEXTANT)			
CE			
- VAR			
DEV			

CEX - ERB METHOD	INS1	INS2	WET
COMPASS TYPE			
MERB (DIAL 000)			
+ ZN			
= MTH			
MCH (READING)			
CE			
- VAR			
= DEV			

CEX SIGHT	
GMT	
GHA	
CORR	
GHA	
LONG +W -E	
EXACT LHA	
LAT	
BODY	
DEC	
HC / D	
CORR	
HC	
Z	
ZN	



"F" FACTOR	PRESS ALT	200	250	300	350
	10,000	1.0	1.0	.99	.99
	20,000	.99	.98	.97	.97
	30,000	.97	.96	.95	.94
	40,000	.96	.94	.92	.90

TRUE AIRSPEED CROSS-CHECK							
TIME	IAS	PRESS ALT	"F" FACTOR	EAS	OAT	TAS	ITAS
0210	211	FL220			-5	304	298/305

NOAA FORM 56-49
(2-95)

MISSION PREFLIGHT LOG

DESTINATION	MISSION	NAVIGATOR	AIRCRAFT COMMANDER	FLIGHT DIRECTOR	SCHEDULED / ACTUAL TAKEOFF Z	DATE OF TAKEOFF
PHNL	ATM Rivers #1	SIEGEL	STRONG	MAYEAUX	2100 / 2049	24MAR05

WP	LAT / LON	RTE	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	LEG / TOT DIST	LEG / TOT TIME	PROP ETA	ETA	ATA	REMARKS
PHNL	N 21 19.0 W 157 55.6	2/12	258	10E	268													
~~SOK~~																		
1	22 30.0 159 30.0	4/14																
2	28 04.0 167 17.0	6/16		2333	FPD													
3	31 54.0 162 22.0	7/17																
4	23 19.0 150 54.0	8/18		0258	FPD													
BAMBO	21 25.0 157 30.6	9/19																
KOKO HEAD CKH	21 15.9 157 42.2	1/11																
~~KEOLA~~	21 17.9 158 29.4		292		302											0435		
~~GRAIL~~	21 30.8 158 51.6		292		302													
~~NAPUA~~	21 44.2 159 14.7		329		339													
~~KHK~~	21 57.9 159 20.3		334		344													
2613N 16430W	26 13.0 164 30.0	5/5																
2820N 15722W	28 20.0 157 22.0																	
2432N 15722W	24 32.0 157 22.0																	
2155N 15554W	21 55.0 155 54.0																	

INS PERFORMANCE	INS 1	INS 2
BEGIN ALIGN TIME	1914	1914
ALIGN STATUS (0-5)	0	0
END NAV TIME	0434	0434
START NAV TIME	2017	2017
DELTA T	8+17	8+17

TERMINAL ERRORS	INS 1	INS 2
DELTA LAT	+3.2	+10.1
DELTA LON	+1.1	-4.9
RGS	5	2
RADIAL ERROR	4	11

REMARKS

13300 PRI Oakland
6534 SEC

2200 Ops nml

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
AIRCRAFT OPERATIONS CENTER

MISSION LOG

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FIX TYPES
(G) - GPS (I) - INS (R) - RADIO (V) - VISUAL (C) - CELESTIAL (D) - DR

TIME	FIX TYPE	POSITION	INS 1 POSITION	K ERR	INS 2 POSITION	K ERR	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS

NOAA · AOC · SED

N42RF AVAPS DROP LOG

Project : GNet/AtRiv '05Mission : Flight ID : 050324H ATM 1

Take Off : Landing :

JIAD

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Winds Time	Operator	Comments	Good ?
1	042 415 110	1		21:21	70	MER		✓
2	042 715 131	2		21:28	105			✓
3	042 715 129	3		21:35	44			✓
4	042 715 130	4		21:42	47			✓
5	043 845 074	1		21:49	40			✓
6	042 715 631	2		21:56	47			✓
7	043 845 050	3	+.5	22:03	34			✓
8	043 845 041	4		22:10	99			✓
9	043 835 027	1		22:17			NO LD	✓
10	042 715 155	2		22:18	20			✓
11	043 845 045	3		22:24	36			✓
12	042 715 136	4		22:31	18			✓
13	042 415 112	1		22:38	20		Possible	
14	042 415 185	2		22:45	20			✓
15	043 835 022	3		22:52	20			✓
16	042 715 135	4		22:59	26			✓
17	042 415 231	1		23:06	29			✓
18	042 415 220	2		23:13	27			✓
19	042 415 253	3		23:20	32			✓
20	042 415 151	4		23:27	28			✓
21	042 415 248	1		23:34	23			✓
22	042 415 228	2		28:31	40?			
23	042 815 147	3		0:40	50			
24	042 815 155	4	+.5	0:52	22			
25	042 715 280	1		0:58	20			
26	042 715 271	2	+.5	1:03	31			
27	042 815 152	3		1:08	22			
28	042 415 133	4		1:13	18			
29	042 412 195	1		1:19	36			
30	042 815 148	2		1:25	24			
31	042 815 150	3		1:31	30			

NOAA · AOC · SED

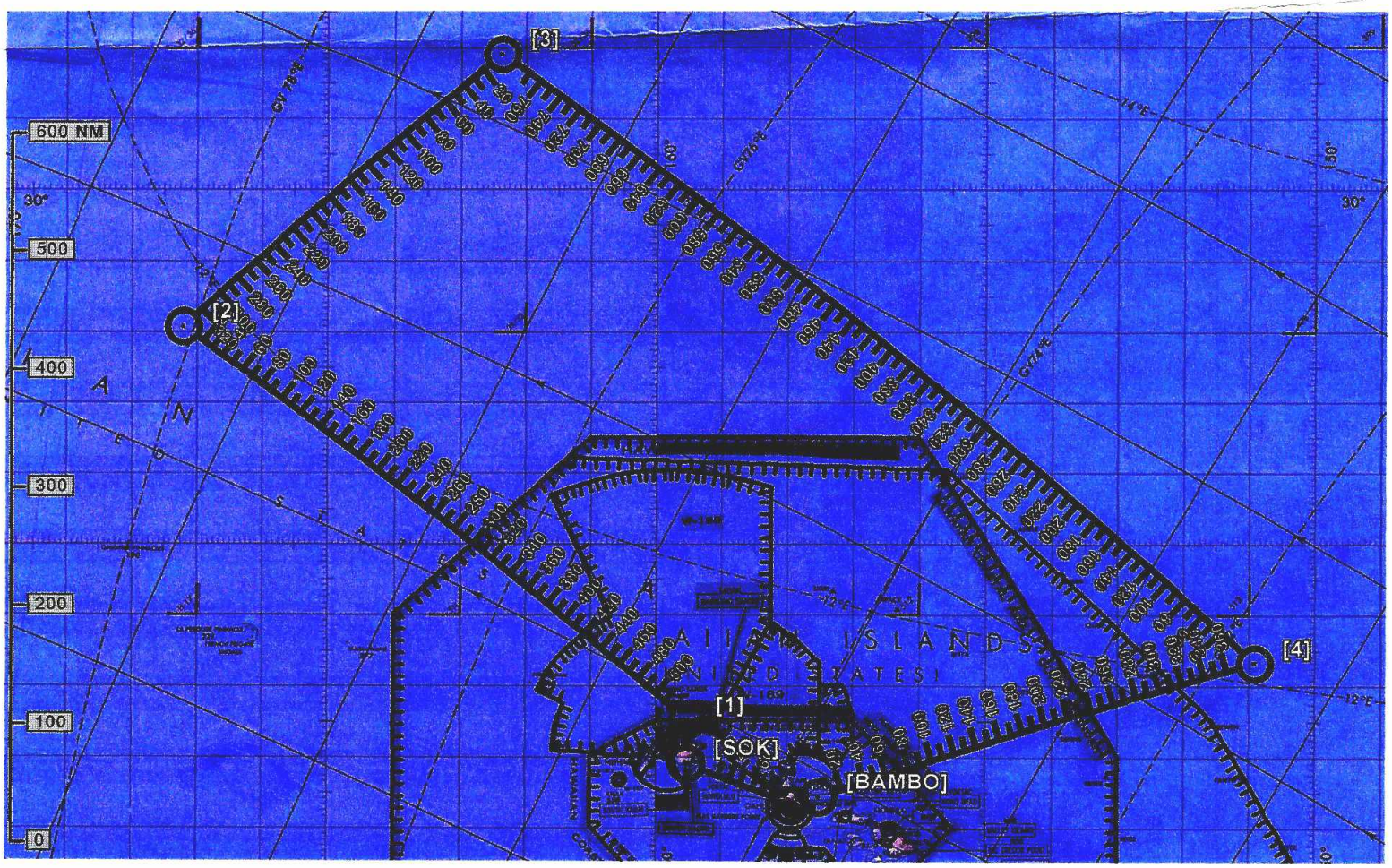
N42RF AVAPS DROP LOG

Project : GNet/AtRiv '05Mission : Flight ID : GNET / ATM 1 050324H

Take Off : Landing :

2X6
12

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Winds Time	Operator	Comments	Good ?
32	042 415 123	4		1:37		MER	late winds	
33	042 815 154	1		1:39	25			
34	042 415 122	2		1:43	34			
35	042 415 144	3		1:49	30			
36	042 715 303	4		1:55	23			
37	042 715 275	1		2:01	14			
38	042 815 156	2		2:07	18			
39	042 715 277	3		2:13	18			
40	042 815 161	4		2:19	12			
41	042 815 153	1		2:25	23			
42	042 715 270	2		2:31	23			
43	042 715 279	3		2:45	24			
44	042 715 134	4		3:00	17			
45	042 715 301	1						


600 NM
500
400
300
200
100
0
[1]
[2]
[3]
[4]
[SOK]
[BAMBO]