

Rogers
080814H

E.2 Lead Project Scientist (On-Board)

E.2.1 Preflight

- ☒ 1. Participate in general mission briefing.
- ☒ 2. Determine specific mission and flight requirements for assigned aircraft.
- ☒ 3. Determine from CARCAH or field program director whether aircraft has operational fix responsibility and discuss with AOC flight director/meteorologist and CARCAH unless briefed otherwise by field program director.
- ☒ 4. Contact HRD members of crew to:
 - a. Assure availability for mission.
 - b. Arrange ground transportation schedule when deployed.
 - c. Determine equipment status.
- ☒ 5. Meet with AOC flight crew at least 90 minutes before takeoff, provide copies of flight requirements, and provide a formal briefing for the flight director, navigator, and pilots.
- ☒ 6. Report status of aircraft, systems, necessary on-board supplies and crews to appropriate HRD operations center (MGOC in Miami or FGOC at remote recovery location).

E.2.2 In-Flight

- ☒ 1. Confirm from AOC flight director that satellite data link is operative (information).
- ☒ 2. Confirm camera mode of operation.
- ☒ 3. Confirm data recording rate.
- ☒ 4. Complete Form E-2.

E.2.3 Postflight

- ☒ 1. Debrief scientific crew.
- ☒ 2. Report landing time, aircraft, crew, and mission status along with supplies (tapes, etc.) remaining aboard the aircraft to the appropriate HRD operations center (MGOC or FGOC).
- ☒ 3. Gather completed forms for mission and turn in at the appropriate operations center. [Note: all data removed from the aircraft by HRD personnel should be cleared with the AOC flight director.]
- ☒ 4. Obtain a copy of the 10-s flight listing from the AOC flight director. Turn in with completed forms.
- ☒ 5. Determine next mission status, if any, and brief crews as necessary.
- ☒ 6. Notify the appropriate operations center (FGOC or MGOC) as to where you can be contacted and arrange for any further coordination required.
- ☒ 7. Prepare written mission summary.

On-Board Lead Project Scientist Check List

Date 8/14/08 Aircraft N42RF Flight ID 080814H

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>Rogers</u>	Flight Director	<u>Damiano</u>
Cloud Physics	<u>—</u>	Pilots	<u>Nelson, Girardot</u>
Radar	<u>Leighton</u>	Navigator	<u>Siegel</u>
Workstation	<u>Leighton, Morillo</u>	Systems Engineer	<u>Peck</u>
Photographer	<u>—</u>	Data Technician	<u>Olney</u>
Omegasonde	<u>Morillo</u>	Electronics Technician	<u>Bucko</u>
AXBT/AXCP	<u>Abrams</u>	Other	<u>—</u>

Take-Off: 1502 Location: Barbados Landing: — Location: —

B. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
<u>14/18Z</u>	<u>18.2</u>	<u>63.4</u>		

C. Mission Briefing:

Fly rotating figure-4 in developing system just NE of windward Islands. System has convective bursts assoc. with it, has been persistent ^(though intermittent) for past 24 h. IP on SE side, 105 nm legs. First pass at 5000 ft. to hunt for center, then climb to 12,000 ft. for rest of mission. If possible, fly burst module around MCS, sampling conv. & strat. areas.

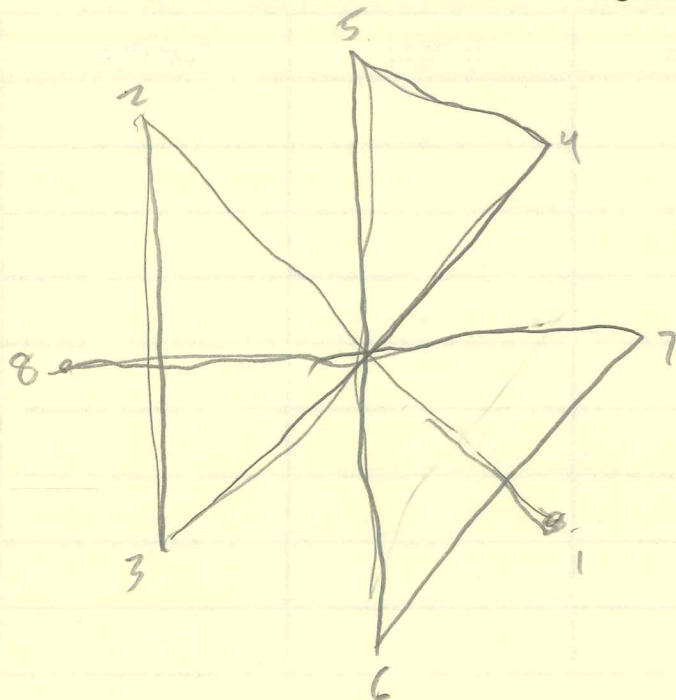
D. Equipment Status

Equipment	Pre-Flight	In-Flight	Post-Flight
Aircraft	✓	✓	
Radar/LF	✓	✓	
Radar/TA (Doppler)	✓	✓	
Cloud Physics	—	—	
Data System	✓	—	
Omegasondes	✓	✓	
AXBT/AXCP	—	—	
Workstation	✓	✓	
Photography	✓	✓	

REMARKS:

Some issues with inertials at beginning of flight. May impact radar data at beginning. Two sondes had problems with fast falls during burst mode.

E. (I) Proposed Flight Pattern (sketch or designate by number)



E. (II) Actual Flight Pattern

See attached

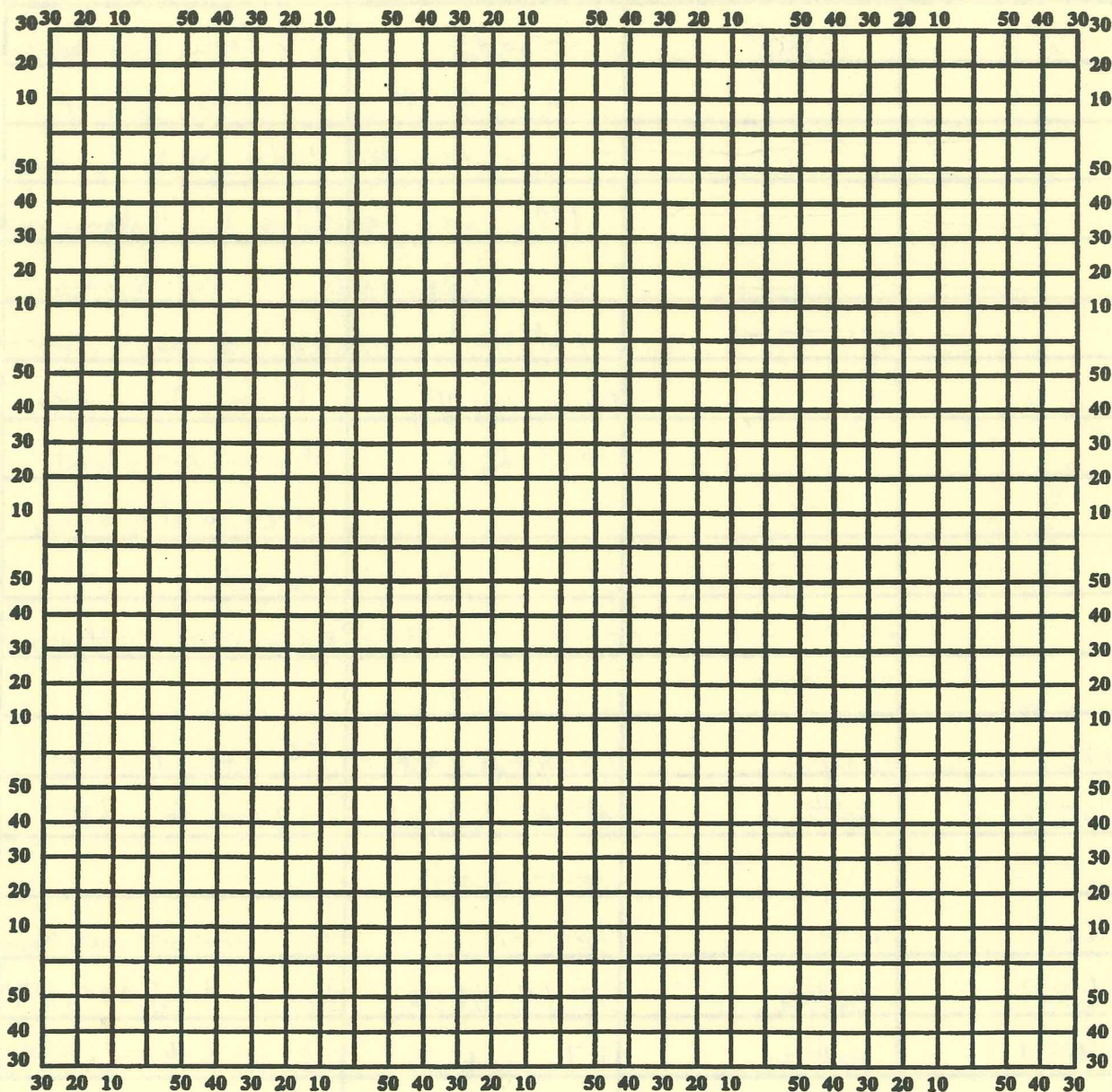
Summary

Mission was very complicated. ATC issues were a significant impediment at the beginning of the pattern. Had to loop, and then deviate track, so could not execute flight plan as originally planned. Ended up climbing to 12 kft (b/c of lack of communications), setting up new WP on NE side. Proceeded SW, then deviated to try to find midlevel anticyclonic winds were northerly there). Proceeded south, then turned to SW, in clear air. Continued there some, then ended leg and headed toward point SE of center. Flew NW, then downwind to W of center. Flew E, through convective system. At end of E leg, flew convective burst module where we flew along back edge of stratiform rain, then turned SW to sample from rear to front, then turned SW to access newly-developing convection to W of MCS (over LL center). Then turned back to sample convection at leading edge of original MCS. Flew front to rear, through strat. region. Turned back to W, then S, sampling new convection again. Dropped smoke at major turn points. Turns of burst module and at midpts. of FTRA RTF

Hurricane Recco Plotting Chart

True at 25° Latitude, in Degrees and Minutes

Date _____ Aircraft _____ Observer _____



Note: Label full degrees according to location of flight area.

Overview.

System was very complex. Clear evidence of a midlevel center, displaced to the E of a possible LL center. Never really sampled LL center though. One radar leg, from west to east, sampled well the midlevel vortex, which was coherent from 13 km up to 10 km. Below that was smoother flow. Possible good data from burst mode, which may have sampled a burst in its mature-to-decaying phase and 1 in its initiation stage.

16 52 IP
61 3.7

Lead Project Scientist Event Log

Date 8/14/88

Flight 080814H

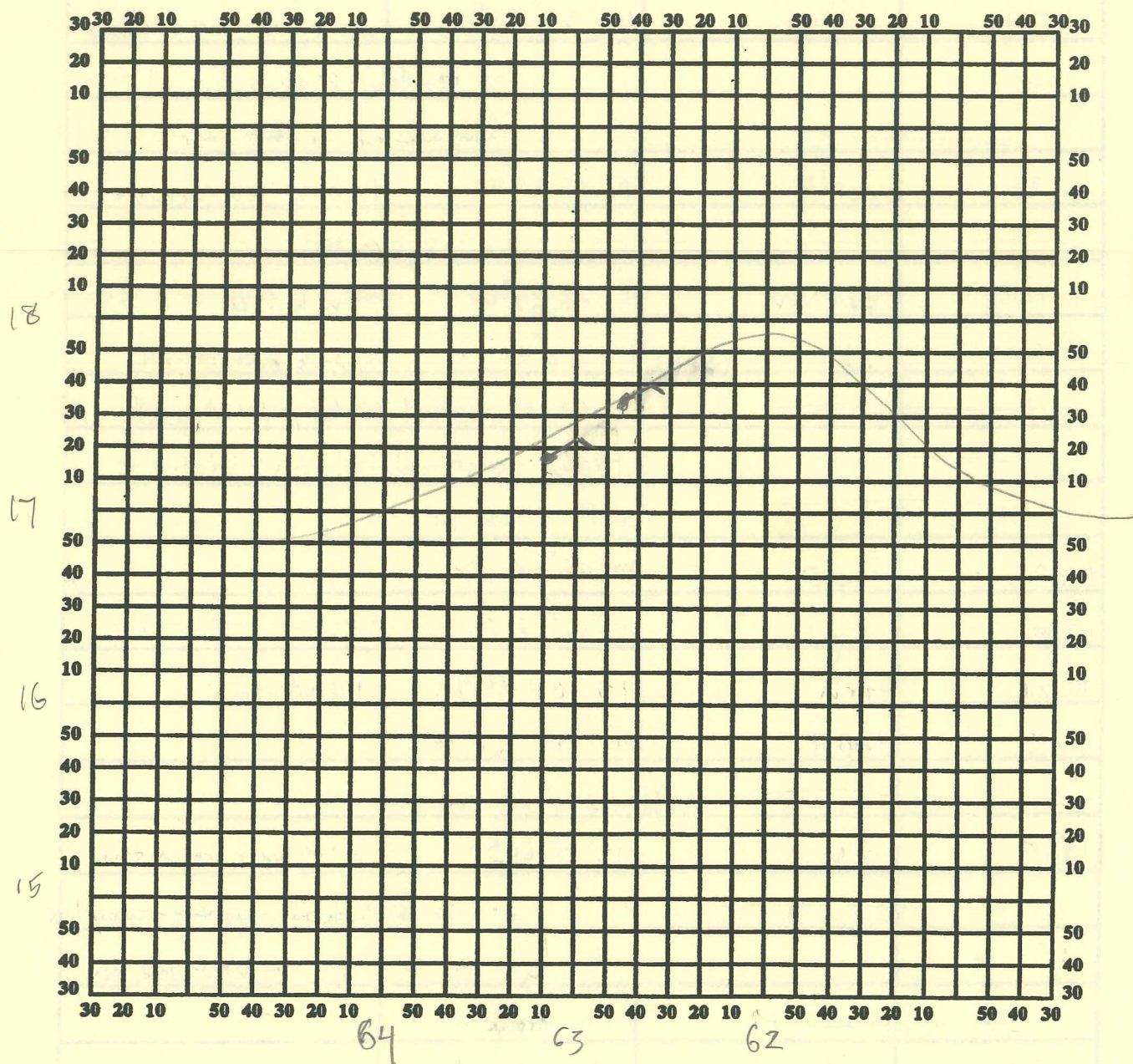
LPS Rogers

Time	Event	Position	Comments
1502	takeoff	Barbados	TL from Barbados
1520	obs	on way to IP	sat images show
			beautiful cloud shield, circular, symmetric,
			190 GHz TB; shield is 1-1 1/2 degrees east
			of estimated center; may need to adjust
			pattern to east a bit to sample convection
1551	obs	15 nm from IP;	LF shows broad area
		16.2 61.3	of convection about
			70-80 nm N of alc;
			40-45 dBZ convective core with
			32-35 dBZ conv./strat. shield around
			it
E 1557	drop 1	20 nm from IP 16.6 61.5	FL 11 kt, SF 25 kt
1602	pattern	at IP; 16.9 61.6,	orbit here, from ATC
		105 nm SE center	
1615	pattern	same location	finished orbits, beginning leg
1622	pattern	17.14 61.52	turn to track 005, ATC
1631	pattern	17.92 61.96	adjust pattern for ATC,
			see new Fig. 2
1707	pattern	19.3 61.61	at new IP, 105 nm NE
			of storm, fly at 12,000 ft.

19.3
61.61

True at 25° Latitude, in Degrees and Minutes

Date _____ **Aircraft** _____ **Observer** _____



Note: Label full degrees according to location of flight area.

Lead Project Scientist Event Log

18° 61°

Date 8/14/08

Flight 080814H

LPS Rogers

Time	Event	Position	Comments
1721	obs	18° 37' 62° 20'	convection well displaced
			of low-level ctr on sat.; Ft winds
			from NE at 12 kt here
1728	pattern	18° 13' 62° 43'	turn to 200, looking
			for 12 kt center
1730	pattern	18° 06' 62° 45'	turn to 180
1735	obs	17° 42' 62° 45'	brock area of NE
			winds, 30° at 10 kt; no evidence of
			closed circulatory ft, or at least we're
			well west of it
E 1709	drop 2	19.26° 61.63°	
E 1800	drop 3	16° 41' 63° 18'	FL 6 kts, SF 17 ft
1821	turn	17° 07' 61° 49'	turn to track
E 1823	drop 4	17° 18' 61° 49'	
			on SE side of storm
1829	obs	17° 48' 61° 55'	convective system still
			on E side of system, sampling
			the SW corner of the convection on
			this track
1835	drop 5	18° 06' 62° 01'	in strat. area of convective
			shield, but winds are NNE here, but still

turn gfc. ctr is west of us (HRO drop)

1833

H

Lead Project Scientist Event Log

Date 8/14/08

Flight 080814H

LPS Rogers

Time	Event	Position	Comments
1846	obs	18°45' 62°22'	drop sonde in MCS shows
			northerly winds from FC to 200 mb,
			then southerly winds b/w 250 & 200 mb,
			then southeasterly winds at sfc., very
			chaotic system, possibly highly tilted
1849	turn	18°57' 62°30'	at NNW point, turn
			to SW
E 1850	drop 6	18°56' 62°35'	
1907	turn	18°01' 63°29'	W of storm, turning
			east to target convective
			now
E 1906	drop 7	17°55' 63°25'	FL 6 kt, SF 15 kt
1917	obs	18°01' 62°51'	about 30 nm from edge
			of precip shield on LF, avoiding some
			isolated convective cores here; SF 30 kt here
1927	obs	18°07' 62°06'	bisecting strat. region
			now, confirming pattern, then starting
			burst mode; passed through possible
			midlevel center, weak FC winds
1933	obs	18°06' 61°40'	FC winds southerly and 30 kt now
B 1943	drop 8	18°11' 61°00'	FL 38 SF 20 kt

Lead Project Scientist Event Log

Date 8/14/08

Flight 08 08 14 H

LPS Rogers



Time	Event	Position	Comments
1944	pattern	18°27'61.01"	beginning burst mode, on back edge of strat shield
1951	turn	18°38'61°27'	turn to track 300, still strat.
1957	turn	18°42'62°	turn to track 215, start ATR leg
1958	drop 9	18°41'62°01'	at pt. CB2 FL 10@33 kt
2003	drop 10	18°25'62°12'	CB3, FL 10@32 kt
2015	turn	18°01'62°54'	turn to 180, bisecting some cones
2016	drop 11	17°59'62°55'	CB4, FL 14@10 kt
2018	turn		turn to track 100, target cones on S side
2024	obs	17°40'62°29'	lightning, hit a -4, +4 w/ couple kt
2029	drop 12	17°38'62°08'	FL 172@15 kt, CB5 fast fall
2031	drop 13	17°45'62°00'	FL 165@22 kt, CB5 again
2036	turn	18°10'61°51'	turn to 0
2037	drop 14	18°11'61°51'	FL 193 ^{CB6} @24 kt, mid pt. of ATR leg
2046	turn, drop 15	18°53'61°52'	thru strat., turn to 270, CB6
2059	drop 16	18°52'62°56'	FL 53@26 kt, turn to 180
2140	obs	18°03'03'	passing E of line of convection lightning
2112	drop 17	17°51'63°03'	FL 225@12 kt (cloud tops at 40-45 kft)
2242	landing	Barbados	Land at Barbados (could be over L center)



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WTNT44 KNHC 230259
TCDAT4
HURRICANE DOLLY DISCUSSION NUMBER 11
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL AL042008
1100 PM EDT TUE JUL 22 2008

THE CENTRAL PRESSURE HAD BEEN FALLING AT A LITTLE OVER 1 MB/HR EARLIER THIS EVENING...BUT OVER THE LAST COUPLE OF HOURS APPEARS TO HAVE LEVELED OFF. MAXIMUM SURFACE WINDS FROM THE SFMR ON THE NOAA AIRCRAFT WERE 70 KT...AND THE ADVISORY INTENSITY IS INCREASED ON THIS BASIS. DOLLY HAS SPENT THE LAST 12 HOURS OR SO TRAVERSING A COOL GULF RING...AND THIS ENCOUNTER MAY BE SLOWING THE INTENSIFICATION PROCESS. WATER VAPOR IMAGERY SHOWS THAT THE CYCLONE'S OUTFLOW IS BEGINNING TO BECOME RESTRICTED TO THE WEST BY A NARROW UPPER LOW OVER WEST TEXAS. CONVECTION REMAINS ASYMMETRIC...FAVORING THE WESTERN SEMICIRCLE...AND THE RADAR PRESENTATION HAS NOT IMPROVED APPRECIABLY OVER THE PAST SEVERAL HOURS. THESE OBSERVATIONS LEAD ME TO BELIEVE THAT ONLY MODEST ADDITIONAL INTENSIFICATION IS LIKELY PRIOR TO LANDFALL... ASSUMING...OF COURSE...THAT DOLLY DOES NOT REMAIN OVER WATER SIGNIFICANTLY LONGER THAN EXPECTED. THE OFFICIAL FORECAST SPLITS THE DIFFERENCE BETWEEN THE SHIPS/LGEM AND THE GFDL.

THE INITIAL MOTION IS 310/8. THE FORWARD SPEED HAS BEEN GRADUALLY SLOWING DURING THE DAY...AS A MID-LATITUDE SHORT WAVE TROUGH DIGS SOUTHWARD FROM THE GREAT LAKES AND WEAKENS THE MID-LEVEL RIDGE TO THE NORTH OF THE TROPICAL CYCLONE. MODEL GUIDANCE...CONTINUES TO SLOW THE FORWARD MOTION OVER THE NEXT 12-18 HOURS...TO 5 KT OR LESS IN THE CASE OF THE GFS. THE MODELS HAVE BEEN QUITE GOOD WITH THE VARIATIONS IN SPEED WITH THIS STORM SO FAR...AND THE OFFICIAL FORECAST REMAINS IN GOOD AGREEMENT WITH THE NUMERICAL GUIDANCE. AFTER LANDFALL...DOLLY SHOULD TURN WESTWARD AT A SLIGHTLY FASTER SPEED TO THE SOUTH OF A SLIGHTLY STRONGER MID-LEVEL RIDGE.

SHOULD DOLLY SLOW AS MUCH AS THE GFS IS FORECASTING...THE CURRENT RAINFALL ESTIMATES...OF UP TO 15 INCHES IN SPOTS...WILL LIKELY BE LOW.

FORECAST POSITIONS AND MAX WINDS

INITIAL	23/0300Z	25.1N	96.0W	70 KT
12HR VT	23/1200Z	25.7N	97.0W	80 KT
24HR VT	24/0000Z	26.1N	98.3W	50 KT...INLAND
36HR VT	24/1200Z	26.3N	99.8W	30 KT...INLAND
48HR VT	25/0000Z	...DISSIPATED		

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FORECASTER FRANKLIN

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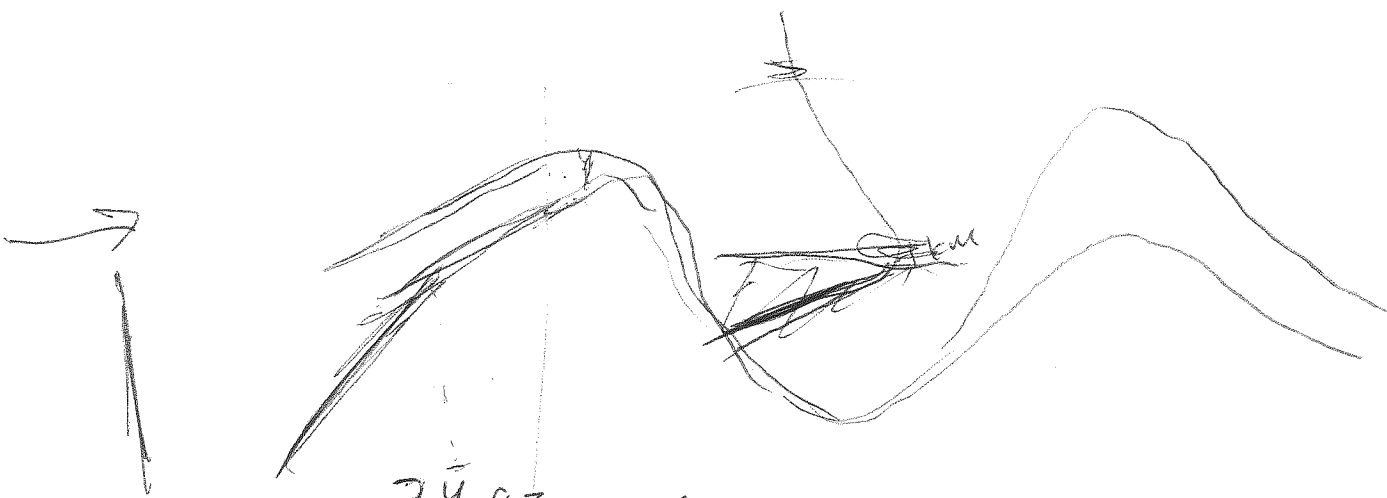
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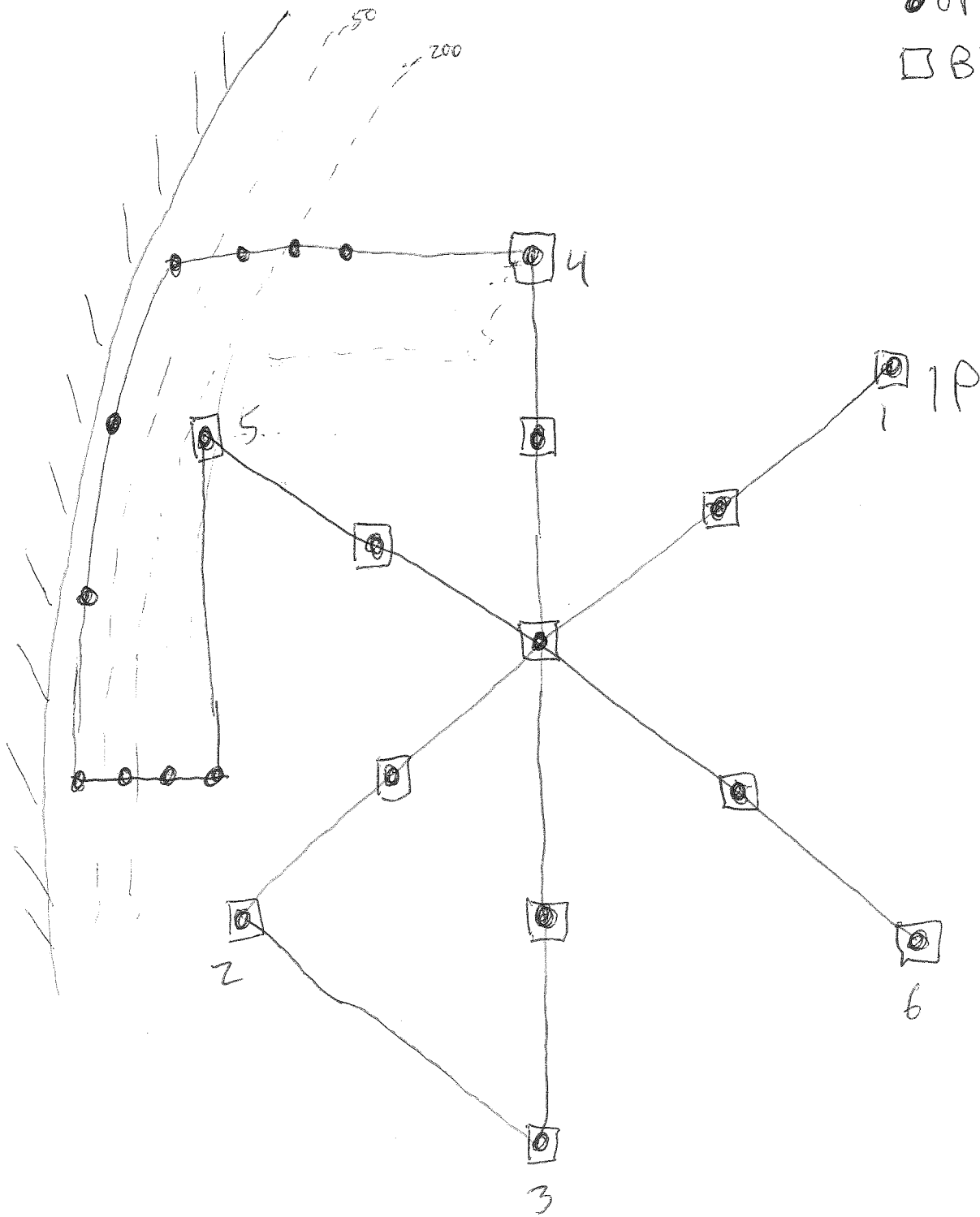
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24.54	93.4	77 50.96
24.34	96.66	82 31.27
24.16	93.79	
23.7	94.04	27 29.61
23.09	96.6	84 46.99
22.63	95	
22.32	95.16	26 10.79
22.59	92.8	92 50.13
23.19	93.99	
23.33	93.73	25 31.65
23.83	94.34	93 58.26
24.18	94.73	24 42
24.42	94.89	95 34
24.89	95.5	23 51
23.8	95.36	97 08
23.84	94.67	23 02
23.84	94.37	95 34
23.84	93.8	26 22
23.84	93	95 34
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planned pattern

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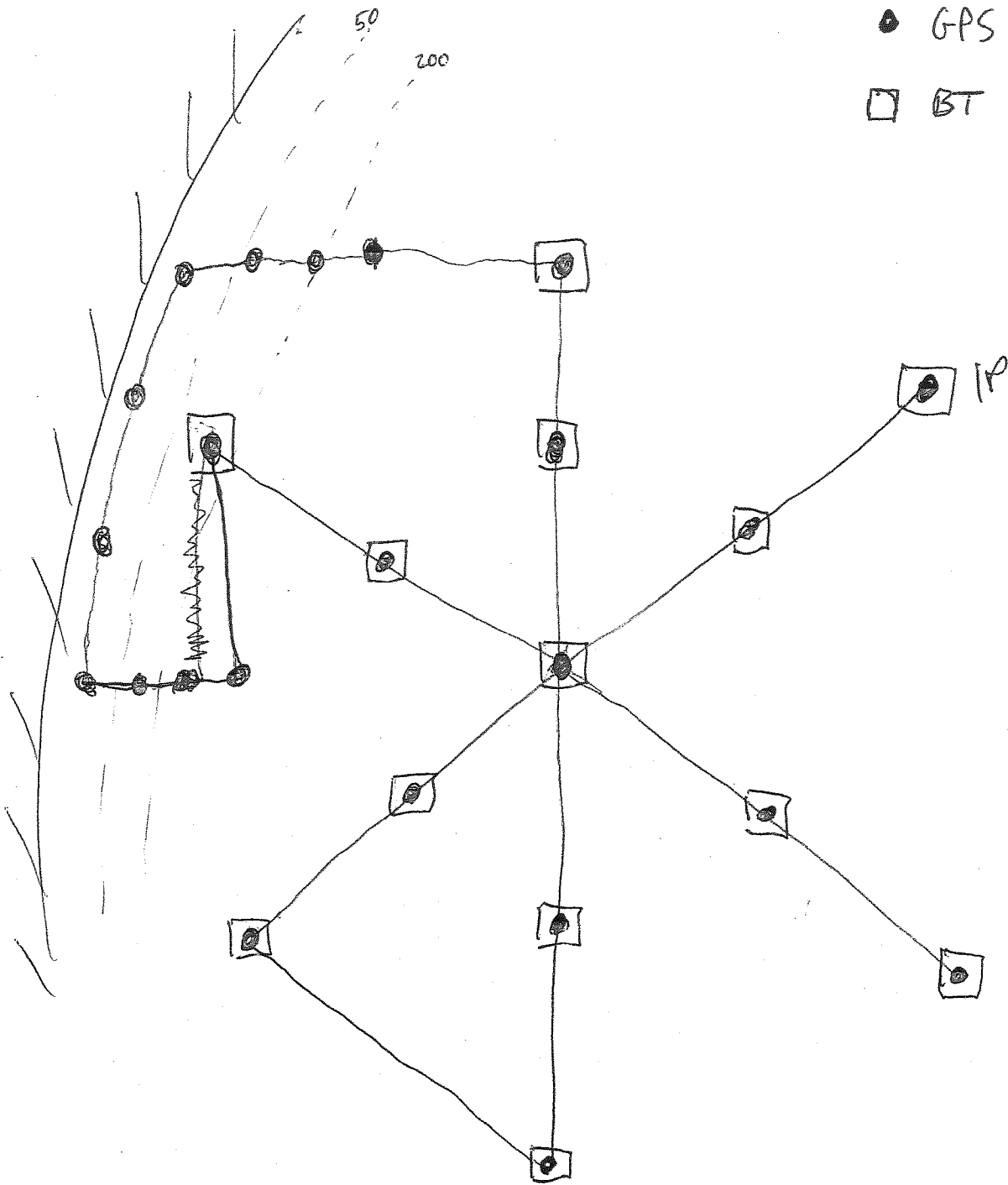
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