Dolly 080722H1

Lead Project Scientist

Preflight

____ 1. Participate in general mission briefing.

____ 2. Determine specific mission and flight requirements for assigned aircraft.

____ 3. Determine from field program director whether aircraft has operational fix responsibility and discuss with AOC flight director/meteorologist unless briefed otherwise by field program director.

____ 4. Contact HRD members of crew to:
   a. Assure availability for mission.
   b. Review field program safety checklist
   c. Arrange ground transportation schedule when deployed.
   d. Determine equipment status.

____ 5. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.

____ 5. Meet with AOC flight crew at least 2 hours before take-off for crew briefing. 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).

____ 7. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drop times.

____ 7. Make sure each HRD flight crew members have life vests

____ 7. Perform a headset operation check with all HRD flight crew members. Make sure everyone can hear and speak using the headset.

____ 8. Collect "mess" fee ($2.00) from all on-board HRD flight crew members.

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 Lead Project Scientist Form.

____ 5. Check in with the flight director to make sure the mission is going as planned (i.e. turns are made when they are supposed to be made).

Post flight

____ 1. Debrief scientific crew.

____ 2. Report landing time, aircraft, crew, and mission status along with supplies (tapes, *etc.*) remaining aboard the aircraft to MGOC.

____ 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. Obtain a copy of the radar DAT tapes. Turn in with completed forms.

____ 6. Obtain a copy of the all VHS videos form aircraft cameras (3-4 approx.). Turn in with completed forms.

____ 7. Obtain a copy of CD with all flight data. Turn in with completed forms.

____ 8. Determine next mission status, if any, and brief crews as necessary.

____ 9. Notify MGOC as to where you can be contacted and arrange for any further coordination required.

____ 10. Prepare written mission summary using **Mission Summary** form (due to Field Program Director a week after the flight).

080722H1

Dolly

Lead Project Scientist Event Log

Date 0 **Flight** _____ **LPS** M. Black

	Time	Event	Position	Comments
1	110512	IP	24.93 92.92	105 nmi NE
		AXBT, sonde	29°C	25m MLD 20m/s
2	11132	AXBT, sonde	24.54 93.4	28.2° 24m/s
3	111837	AXBT, sonde	24.34 93.66	40m MLD
			28 m/s 28.1	
4	112200	AXBT Sonde	NW	NE eyewall
		24.16 93.79	30 m/s	28.1
5	112815	Eye, AXBT, sonde		
			23.7 94.04	28°
6	113956	SW eyewall	23.09	94.60
			25 m/s	
7	114841	Sonde midpoint	22.63	95.01
8	115426	Sonde SW endpoint	22.32	95.16
9	122145	22.59	92.80	SE point
		AXBT, sonde	28.2°	
11	123607	23.19	93.49	Sonde midpoint
12	123950	SE eyewall	23.33	93.73
13	125042	Eye		
		23.44	94.19	
		23.83	94.34	
14	125749	AXBT, sonde	24.18	94.73 NW eyewall
15	130237	Sonde midpoint	24.42	94.98
		Endpoint Combo	28°	
	1312	AXBT		40m MLD
			24 53.5'	
			95° 29.4'	

132930 Endpoint W

23' 48' 95 21.3

Lead Project Scientist Event Log

Date ____________ Flight ____________ LPS ____________

Time	Event	Position	Comments
133735	Sonde W eyewall	23°50'20"	
		23.84	94.67
134250	23 50.4"	94 22.1	
	eye		
134959	Sonde east eyewall	- 0613	2922 10 47SL (999.)
	BT, sonde	0613	2054 28° MBL 175 67
140228	~~BT, Sonde~~		
140942		0546	26258 28°
141000	End of Ferry - climb		
	23°50.5	92°28.5	

2493
24,2 9205

Mission Summary

Storm name

YYMMDDA# Aircraft 4_RF

Scientific Crew (4 RF)

Lead Project Scientist _____
Radar Scientist_____
Cloud Physics Scientist_____
Dropwindsonde Scientist_____
Boundary-Layer Scientist_____
Workstation Scientist_____
Observers_____

Mission Briefing: (include sketch of proposed flight track or page #)

Mission Synopsis: (include plot of actual flight track)

Evaluation: (did the experiment meet the proposed objectives?)

Problems:(list all problems)

Expendables used in mission:
GPS sondes : _____
AXBTs :_____
Sonobuoys: _____

Flight 080722H

Take off time: 8:51 Z

Start recording data → 0908 Z

Sonde Software updated.

Scheduled altitude: 10000 ft

ID mission: 1504A Dolly

Going down to 10000 ft 1053 Z
lat 25° 15' N 92° 3' W

Seeing an eye on lower fuselage @ ~140 km from plane located (25° 9' ~92° 20', ~1056 Z)

IP

leg start: 110518
@ 24.93 -92.94

NE eyewall

BT drop locations

	Lat / lon	Ch	W?	SST
1.	24° 31′ 90° 39′	12	Y	28.9
2.	23° 58′ 90° 59′	12	Y	28.7
3.	23° 25′ 91° 20′	12	Y	24.5
4.	22° 41′ 91° 48′	14	N	—
5.	24° 08′ 92° 45′	12	Y	28.8
6.	25° 15′ 92 29	12	Y	29.3
7.	25 35 92 15	12	Y	29.0
8.	25 53 92 04	12	Y	29.1
9.	25 50 92 13	12	Y	29.0
10.	25 34 92 31	12	Y	28.9
11.	25 20 92 51	12	Y	29.3
12.	25 07 93 06	12	Y	29.3
13.	24 51 93 26	12	Y	28.9
14.	24 38 93 42	12	Y	28.7
15.	24 21 94 04	12	Y	28.2
16.	24 06 94 21	14	N	—
17.	23 51 94 30	14	Y	27 (look up for 16)
18.	23 36 94 36	14	Y	26.1

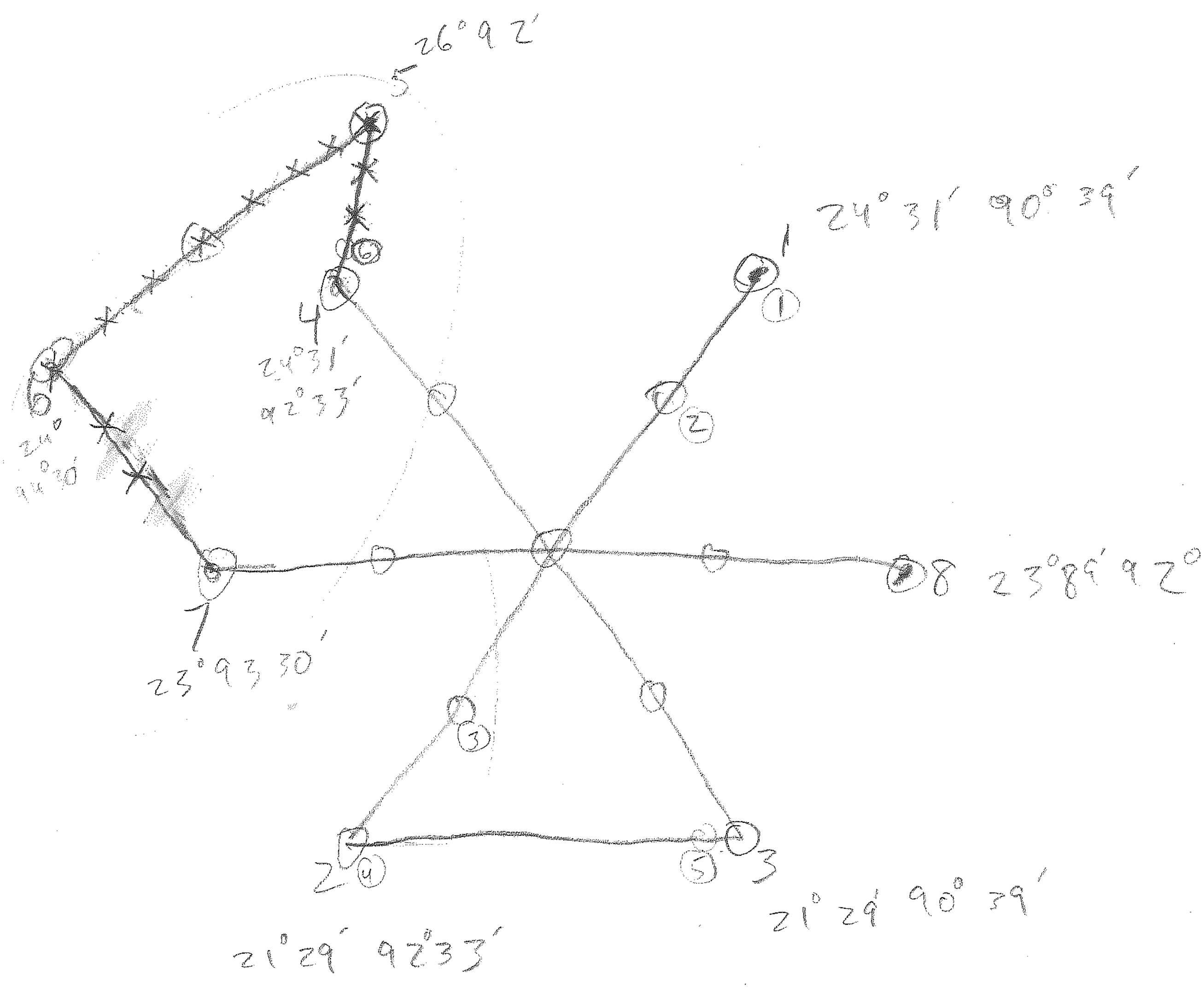
12	12	22° 30′	91° 30′
2	2	23°	91°
4	3	24°	91°
12	4	23° 30′	91° 24′ - not work
15	5	22° 48′	92°
	6	24° 12′	92° 30′

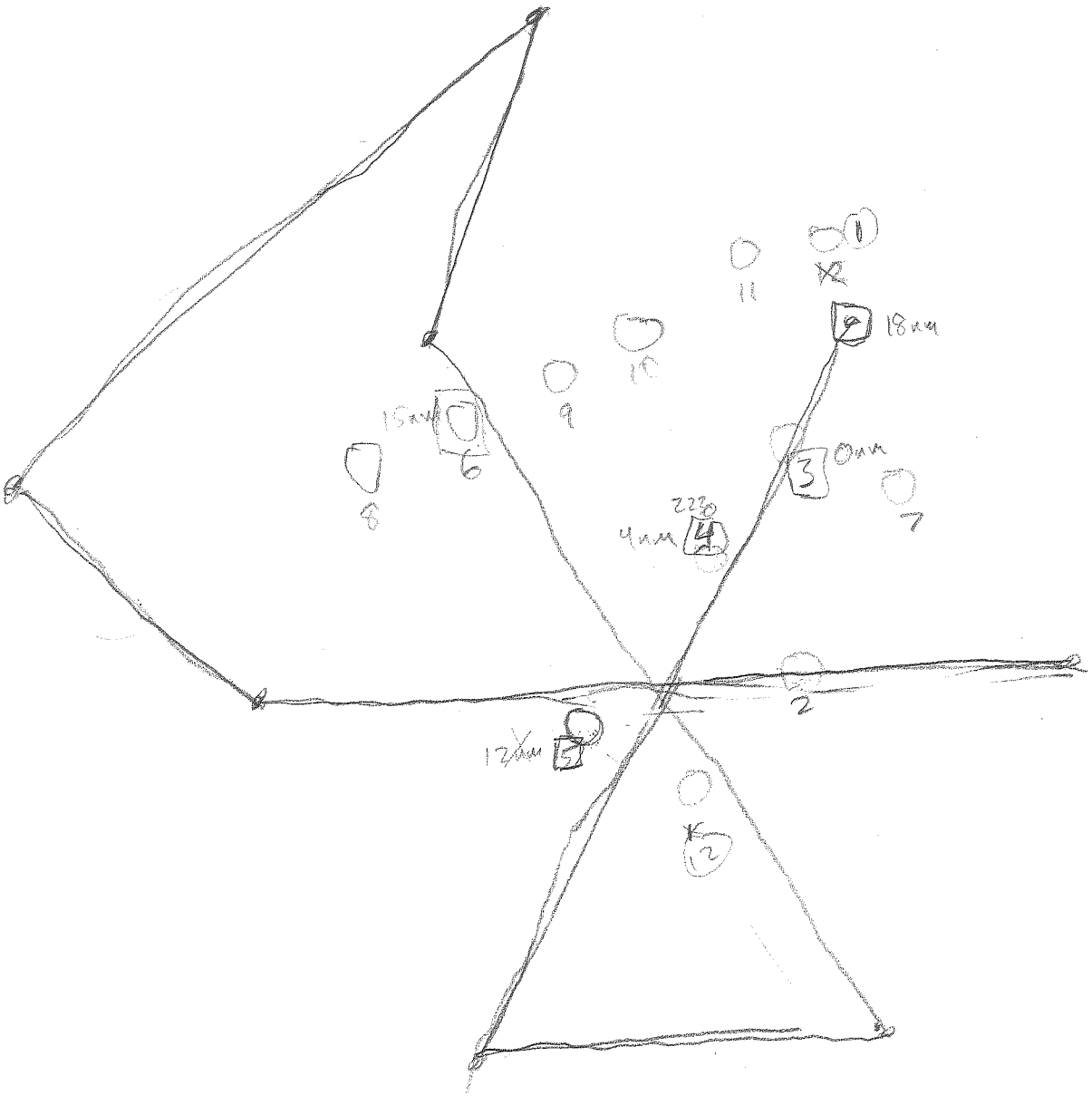
anticipated coincident drop locations

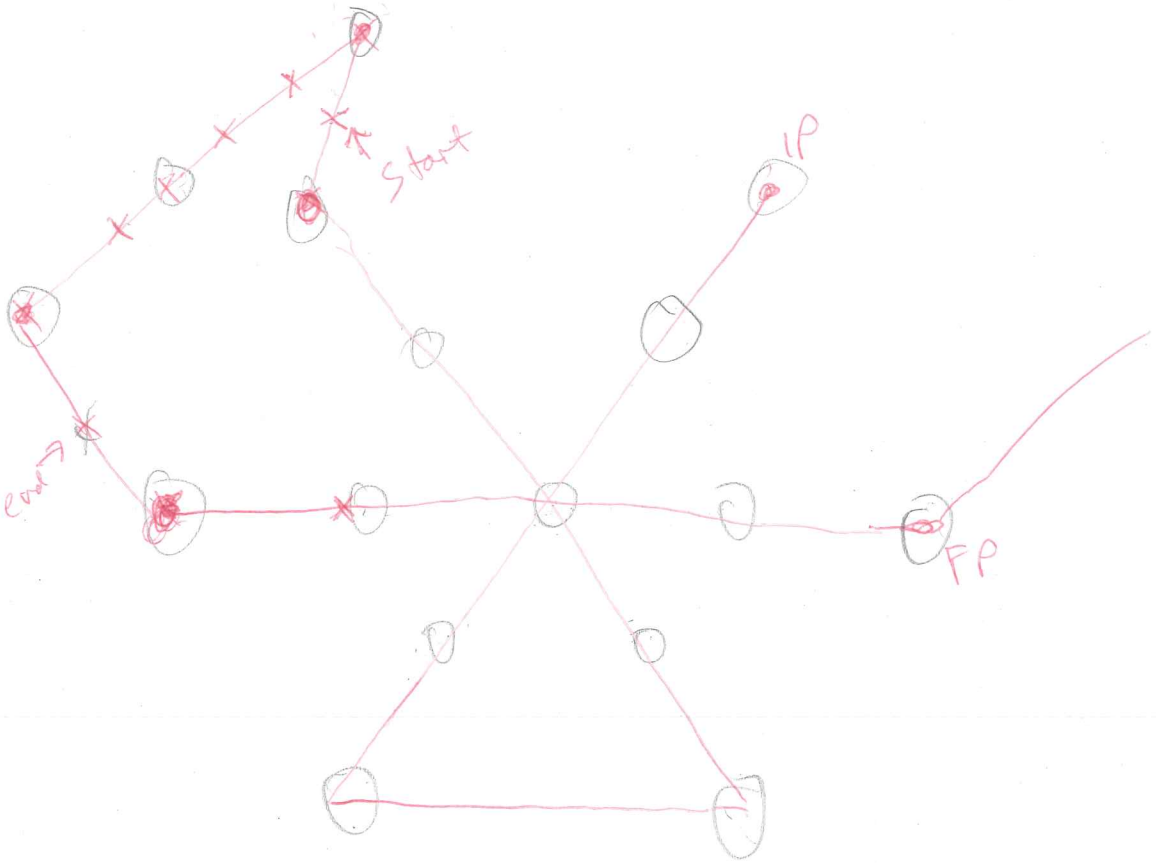
	7	23° 48′	90° 30′
	8	24°	93°
	9	24° 24′	92° 06′
	10	24° 30′	91° 42′
	11	24° 48′	91° 12′
18	1	24° 54′	90° 48′

additional drops

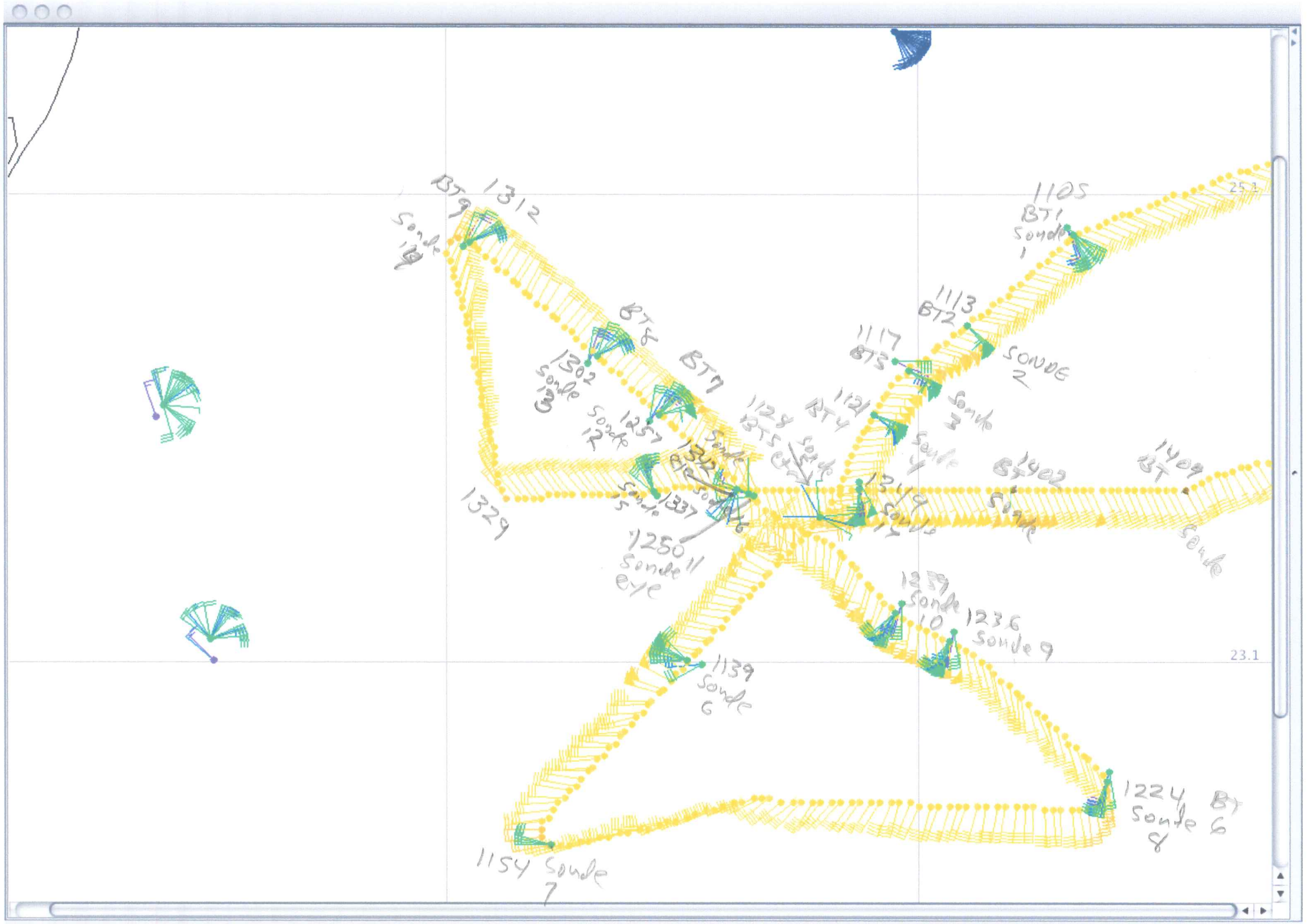
BTs


5 26° 92'
1 24° 31' 90° 39'
4 24° 31' 92° 33'
6 24° 94° 30'
8 23° 89' 92°
7 23° 93, 30'
2 21° 29' 92° 33'
3 21° 29' 90° 39'


1
11
9
18mm
10
9
15mm
6
8
3
0mm
7
22°
4mm
4
2
12mm
5
12



25 mm spacing

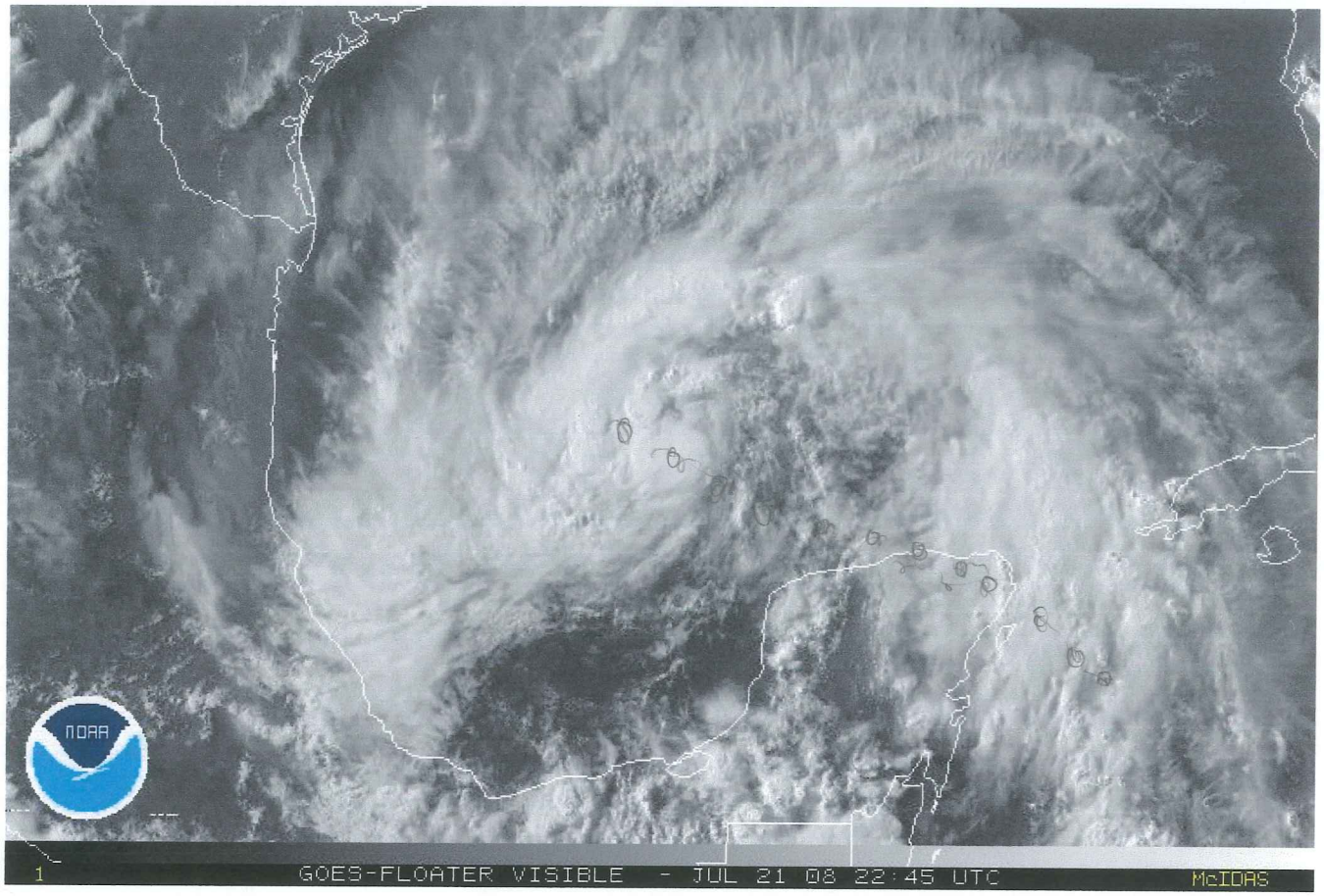


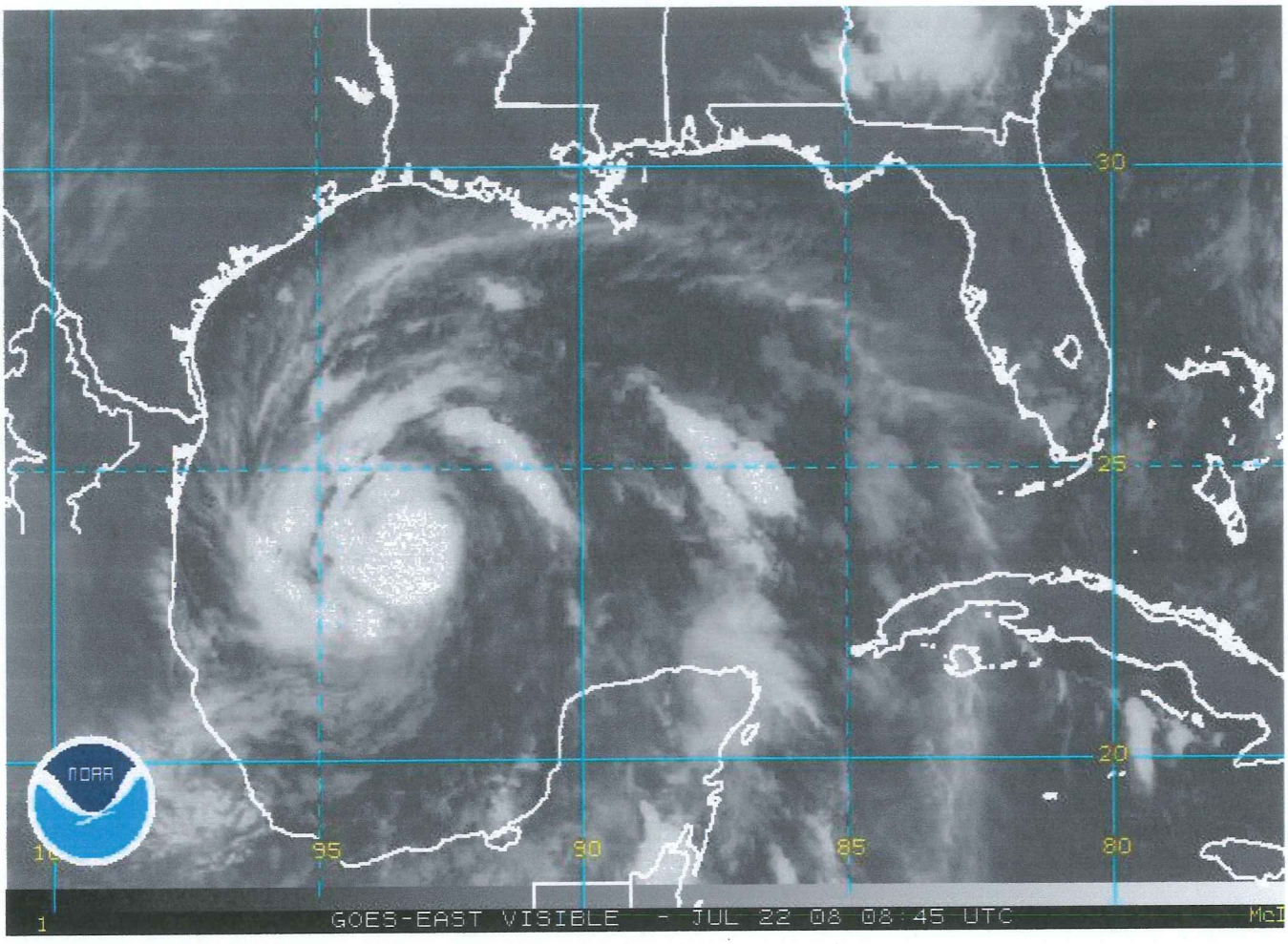
Maximum Wind 73.09 kt at 23.840, -93.850; 13:49z (GPSSONDE_WIND_LVL)

Track: Begin Center End

mblack [*hrd*] logged in. Logout LOCATION: 22.277 lat, -92.249 lon

Auto Pilot for none Check New Data Now


NOAA
1
GOES-FLOATER VISIBLE - JUL 21 08 22:45 UTC
McIDAS


30
25
20
95
90
85
80
NOAA
GOES-EAST VISIBLE - JUL 22 08 08:45 UTC

Tropical Storm DOLLY Forecast Discussion

000
WTNT44 KNHC 220833
TCDAT4
TROPICAL STORM DOLLY DISCUSSION NUMBER 8
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL AL042008
500 AM EDT TUE JUL 22 2008

AN AIR FORCE RESERVE UNIT HURRICANE HUNTER PLANE REPORTED THAT THE CENTRAL PRESSURE DROPPED A LITTLE...TO 997 MB. THE SFMR ON BOARD THE AIRCRAFT REPORTED WINDS NEAR 60 KT IN THE SOUTHEAST QUADRANT BUT THESE READINGS WERE IN AREAS OF HEAVY PRECIPITATION WHICH PROBABLY CAUSED SPIKES IN THE VELOCITY VALUES. ASSUMING THAT THESE WERE OVERESTIMATES BUT TAKING INTO ACCOUNT THE SLIGHTLY LOWER PRESSURE THE CURRENT INTENSITY IS ESTIMATED TO BE SLIGHTLY HIGHER...50 KT. SATELLITE IMAGERY INDICATES THAT THE TROPICAL CYCLONE IS STILL IN THE ORGANIZING STAGE WITH SOME BANDING FEATURES OVER THE WESTERN SEMICIRCLE. THERE IS A PRONOUNCED UPPER-LEVEL OUTFLOW CHANNEL EMANATING FROM THE NORTHWESTERN PART OF THE CIRCULATION THAT EXTENDS ANTICYCLONICALLY AROUND THE EASTERN SIDE OF DOLLY AND POURING SOUTHWARD INTO THE WESTERN CARIBBEAN...HOWEVER OUTFLOW IS BEING INHIBITED OVER THE SOUTHERN PART OF THE STORM BY AN UPPER-LEVEL LOW OVER THE BAY OF CAMPECHE. DYNAMICAL GUIDANCE INDICATES A MORE SYMMETRIC OUTFLOW PATTERN EVOLVING OVER THE NEXT DAY OR SO. RECENT ENHANCED IR IMAGERY SHOWS AN INCREASE IN CONVECTION NEAR/OVER THE CENTER WHICH SUGGESTS THAT FURTHER STRENGTHENING IS IMMINENT. THE OFFICIAL INTENSITY FORECAST IS VERY SIMILAR TO THE PREVIOUS ONE AND IS ABOVE THE SHIPS GUIDANCE...BUT NOT FAR FROM THE GFDL/HWRF PREDICTIONS. IT SHOULD BE NOTED THAT ONCE DOLLY ESTABLISHES AN INNER CORE...I.E. AN EYEWALL-LIKE STRUCTURE...THE RATE OF INTENSIFICATION COULD BE FAIRLY RAPID IN COMPARISON TO WHAT WE HAVE OBSERVED THUS FAR. HOWEVER...IT SEEMS UNLIKELY THAT DOLLY WOULD BECOME A MAJOR HURRICANE PRIOR TO LANDFALL.

FIXES FROM THE AIRCRAFT SHOW THAT THE MOTION HAS BEEN ONLY SLIGHTLY NORTH OF DUE WEST AT A SLIGHTLY SLOWER FORWARD SPEED...OR 280/13. THE TRACK FORECAST REASONING IS BASICALLY UNCHANGED. A COUPLE OF SHORT WAVE TROUGHS MOVING THROUGH THE GREAT LAKES/OHIO VALLEY REGION ARE FORECAST TO ERODE SLIGHTLY THE PORTION OF THE MID-TROPOSPHERIC RIDGE OVER EASTERN TEXAS. AS A RESULT...THE TRACK OF DOLLY IS LIKELY TO BEND TOWARD THE NORTHWEST WITH ADDITIONAL DECELERATION OVER THE NEXT DAY OR SO. THE LATEST NHC TRACK FORECAST IS NEAR OR SLIGHTLY NORTH OF THE MODEL CONSENSUS...AND A LITTLE SOUTH OF THE LATEST GFDL/HWRF TRACKS. AGAIN IT SHOULD BE EMPHASIZED THAT...DUE TO THE INHERENT UNCERTAINTIES...ONE MUST NOT FOCUS ON THE EXACT LANDFALL POINT IN THIS FORECAST.

```
FORECAST POSITIONS AND MAX WINDS

INITIAL      22/0900Z 23.3N  93.8W    50 KT
 12HR VT     22/1800Z 24.1N  95.1W    55 KT
 24HR VT     23/0600Z 25.0N  96.5W    65 KT
 36HR VT     23/1800Z 25.7N  97.5W    75 KT...INLAND
 48HR VT     24/0600Z 26.0N  99.0W    45 KT...INLAND
 72HR VT     25/0600Z 26.0N 102.0W    20 KT...REMNANT LOW
 96HR VT     26/0600Z...DISSIPATED

$$
FORECASTER PASCH
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Vortex Data Message

```
000
URNT12 KNHC 220731
VORTEX DATA MESSAGE AL042008
A. 22/07:05:20Z
B. 23 deg 14 min N
   093 deg 28 min W
C. 850 mb 1399 m
D. 38 kt
E. 139 deg 48 nm
F. 214 deg 045 kt
G. 138 deg 046 nm
H. 997 mb
I. 15 C/ 1528 m
J. 19 C/ 1522 m
K. 14 C/ NA
L. NA
M. NA
N. 1345/8
O. 0.02 / 2 nm
P. AF308 1304A DOLLY         OB 10
MAX FL WIND 54 KT NE QUAD 05:12:50 Z
MAX OUTBOUND FL WIND 48 KT NW QUAD 0720 Z
```

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Turn Pt	Type DTD	Fix/Point Description	Latitude Longitude	Elev MV	Aspd Bank	Calc Bank Time Adjust	Altitude Wind	Temp FF	MH MC
1	ST	**KMCF/A**	N 27 50.96	14FT		0	14M	-25C	045
*M		MACDILL AFB	W082 31.27	4.5W		0.0		0	045
2		**CIGAR/W**	N 27 29.61	unk	279T	0	20000M	-25C	265
*M		CIGAR	W084 46.99	2.9W		0.0		0	265
3		TR005045105	**N 24 56.12**	unk	250T	0	20000M	-25C	256
*M			**W092 56.32**	2.5E		0.0		0	256
4			**N 23 42.00**	unk	250T	0	20000M	-25C	223
*M			**W094 18.00**	3.3E		0.0		0	223
5		TR004225105	**N 22 27.16**	unk	250T	0	20000M	-25C	222
*M			**W095 38.15**	4.1E		0.0		0	222
6		TR004135105	**N 22 27.16**	unk	250T	0	20000M	-25C	085
*M			**W092 57.85**	2.7E		0.0		0	085
7			**N 23 42.00**	unk	280T	0	20000M	-25C	313
*M			**W094 18.00**	3.3E		0.0		0	313
8		TR004315105	**N 24 56.12**	unk	280T	0	20000M	-25C	312
*M			**W095 39.68**	3.9E		0.0		0	312

Turn Pt	Leg Time Clock Time	Leg Dist Total Dist	Leg Fuel Total Fuel
1	00+00+00	0.0	500
*M	00:00:00	0.0	9500
2	00+26+19	122.4	0
*M	00:26:19	122.4	9500
3	01+51+47	465.8	0
*M	02:18:06	588.2	9500
4	00+25+12	105.0	0
*M	02:43:18	693.2	9500
5	00+25+12	105.0	0
*M	03:08:30	798.2	9500
6	00+35+38	148.5	0
*M	03:44:08	946.6	9500
7	00+22+30	105.0	0
*M	04:06:38	1051.6	9500
8	00+22+30	105.0	0
*M	04:29:08	1156.6	9500