Rogers

040924 I Jeanne

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).

Lead Project Scientist Check List

Date 9/24/04 **Aircraft** N43RF **Flight ID** 040924I Jeanne

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	Rogers	Flight Director	Shepherd
Radar	Rogers, Lee	Pilots	Silah, Strong, Avy
Workstation		Navigator	Gallagher
Cloud Physics	Litchendorf	Systems Engineer	
Photographer/Observer /Guests	Ortner	Data Technician	Lynch
Dropwindsonde	Smith	Electronics Technician	
AXBT/AXCP	Uhlhorn - SFMR, Leighton - BAT	Other	

B. Take-off and Landing Locations:

Take-Off: 150238 Location: Cecil Field, JAX

Landing: 2250 Location: MacDill AFB

Number of Eye Penetrations: 5

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
24/09	26.1	71.6		85 kt
24/18	26.1	73.1		85 kt
25/06	26.2	75.4		90 kt
25/18	26.6	77.6		95 kt
26/06	27.1	79.5		100 kt

D. Mission Briefing:

CBLAST mission to collect rain, wind & wave measurements from sFMR, SRA, PDA, Fly rotating Fig. 4 pattern, IP 100 nm NW of ctr. On first downwind leg launch 4 BT's evenly-spaced. (see Fig. 1). On second penetration, travel 45 degrees downwind, then S-N leg and ~~enter~~ next Figure 4. At end of fig. 4 turn downwind 45 degrees to FP 75 nm north of storm (leg lengths are 75 nm). Fly at 5 kft for first penetration, then descend at end of leg to 3 kft. Stay at 3 kft as long as possible for rest of pattern, fuel permitting. Coordinate w/42 on first figure 4. 42 will release sonobuoys on inner edge of eyewall on each leg of Fig 4 pattern, calling out launches & channels 2 minutes prior to the launch of each BT + Sonobuoy.

E. —Equipment Status (Up ↑, Down ↓, Not Available —, Not Used **O**)

Equipment	Pre-Flight	In-Flight	Post-Flight	# DATs / Cds /Expendables/ Printouts
Radar/LF	✓	✓		
Doppler Radar/TA	✓	✓		
Cloud Physics	✓	✓		
Data System	✓	✓		
GPS sondes	O-	O		
AXBT/AXCP	✓	✓		
Workstation	O	O		
Videography	✓	✓		

REMARKS:

- Air cond. in fuselage failed before takeoff. Cabin will be warm, which may cause problems with instrumentation

- Problem with cabin-pressure regulator; had to descend to 12 kft 1 hr before IP. That will also burn more fuel

- SPA down at ~ 1800 UTC; Ed Walsh trying to get it back up. May be bit of heat in cabin

26° 54' 74° 00' IP lat/lon
27° 00' 73° 40' new IP
26° 11' 72° 42' radar fix

sonobuoy 1 8 2 10 1 15
1 10 on 1st pass
1 10 on 2nd pass
14 16 alternating BT

Lead Project Scientist Event Log

Date 9/24/04 **Flight** 040924I **LPS** Rogers

Time	Event	Position	Comments
150238	Takeoff	Cecil Field, JAX	
150720	flight	around Cecil Field	doing flyover of runway for JIM
150931	flight	30°17' 81°50'.	climb to 15kft, toward IP
163056	SF winds	9.0 miles from IP	34-kt winds 140 nm NW of eye
1640	radar	27°22' 75°02'	tape started now
1651	radar	31 miles from IP NW	10/10 of clutter on LF, even at 12 kft
165217	flight	26°52' 74°32'	descending to 3 kft for BAT maneuvers
165525	flight	26°36' 74°26'	too many clouds for box pattern,
170027	pattern	70 nm from eye	will climb to 5 kft and fly cal maneuv. after pattern
		→	at IP
172500	SF winds	52 nm NW of eye	64 kt winds 52 nm from eye
173030	radar	30 nm from eye	possible outer eyewall 60-70 nm
			diameter, possibly hexagonal eyewall
173338	winds	in eye	max FL winds 95 kt, SF winds 80 kt
			extrap SLP 968 mb, later in eye
174635	BT	SE eyewall (rear it)	27.7 SST in advance of storm (NW)
174810	SF winds	SE eyewall	max FL winds 84 kt, SF 80 kt SE of eye
1738	42 fix		26°23' 73°00'
1748	SF winds	49 miles SE of eye	64-kt winds 40 nm SE of eye
175808	radar	69 miles SE of eye	line of isolated convective cells
			70 miles out from eye, SF winds of
			55 kt here
bad-* 180100	BT drop	72 nm from eye	BT drop 1
180218	pattern	after turn 1, downwind leg	descend to 3 kft
* 181208	BT drop	26°46' 72°09'	BT drop 2 midway thru downwind leg; 23.8 SST
181638	pattern	27°05' 72°20'	climb to 5 kft
* 182139	BT drop	at turn for inbound leg	BT drop 3 at turn; 26.6 SST
			45 nm MLD

26° 23'
73° 05'
1757Z AF fix

Lead Project Scientist Event Log

Date 9/24/04 **Flight** 040924I Jeanne **LPS** Rogers

Time	Event	Position	Comments
183342	SF wind 06	43 nm NE of eye	64-kt winds 55 nm from eye
183908	winds	in eye	max FL 95 kt, SF 90 kts
185135	winds	outside SW eyewall	max FL 84 kt, SF 80 kt
185504	42 drop	50 nm SW eye	Sonobuoy, BT drop in SW eyewall
			did not get picked up
185704	42 drop	67 nm SW of eye	BT Ch 14 out
185725	SF wind	60 nm SW of eye	64-kt winds 45 nm from eye
190545	42 drop	75 nm SW of eye	BT Ch 16 out
191016	pattern	77 nm S of eye	turn to track 00, inbound leg
192024	SF wind	41 nm S of eye	64-kt winds 41 nm from center
192629	winds	in eye	max FL 88 kt, SF 80 kt in S eyewall
194045	winds	in N eyewall	max FL 110 kt, SF 85 kts
194818	SF wind	65 nm N of eye	65 nm from eye (64-kt wind)
194931	pattern	70 nm N of eye	turn to track 225, downwind leg
* 195108	BT drop 4	70 nm N of eye	BT drop 4 27.0 SST 50m MLD
201038	pattern	68 nm W of eye	turn to track 90, final inbound leg
* 201220	BT drop 5	65 nm W of eye	drop 5 27.4 SST 50m MLD
201322	SF wind	62 nm W of eye	64-kt radius 65 nm from eye
202320	winds	eye	max FL 85 kt, SF 80 kt
203328	radar	E eyewall	outer eyewall open on E side
203508	winds	east of eyewall	max FL 80 kt, SF 80 kt

1933
26° 25'
-73° 21'
965

Lead Project Scientist Event Log

Date 9/24/04 Flight 0409ZHI Jeanne LPS Rogers

Time	Event	Position	Comments
203629	sf winds	26°23' 72°35'	64-kt wind radius at 42 nm E of eye
204306	pattern	65 nm E of eye	turn left 180, do another inbound leg
204539	BT drop	50 nm E of eye	BT 6 launch, did not fire
210154	turn	in eye	turn to 282 track, RTB
			from there, mapping out
			sf winds for 34-kt winds
211033	winds	26°39' 74°21'	max FL 115 kt, sf 90 kt on NNW
			side of eyewall
211500	fix by 42		26°22' 73°43' 964 mb
211605	sf winds	65 nm from eye	64-kt winds 65 nm from center (NNW)
212058	pattern	26°48' 75°10'	climb to 10,500 ft, RTB
213928	sf winds	180 nm from eye	34-kt winds 160 nm NNW of eye
2250	land	MacDill AFB	Land at MacDill AFB

Mission Summary
Storm name
YYMMDDA# Aircraft 4_RF

Scientific Crew (4 RF)

Lead Project Scientist Rogers
Radar Scientist Lee, Rogers
Cloud Physics Scientist Litchendorf
Dropwindsonde Scientist —
Boundary-Layer Scientist Zhang-Stark, Leighton-BAT
Workstation Scientist —
Observers Orthner

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

See section d and Fig. 1

Mission Synopsis: (include plot of actual flight track) mission was coordinated w/42 to drop BT's and sonobuoys in advance of storm and on inner edge of eyewall on all quadrants. Coordination was fine on fig 4, drops and channels were communicated well. Before takeoff cabin air cond. failed, so entire mission was flown w/out A/C. The heat inside the cabin likely affected the instruments, with the SFA failing after 1st penetration. That coupled w/ no A/C meant there was no value (and only cost) with descending to 3000 ft, except for unobstructed looks at sfc. for downward-looking LR. we did fly about 40 nm at 3kft, but there were no real clear slots for IR camera so returned to 5000 ft and flew rest of pattern there. SST's ranged blw 26.6 & 27.4°C ahead of and to the right rear of track. Sfc wind field was highly asymmetric, with highest winds extending the farthest on the west and north sides (65-70 nm) and least on the east and south (40-42 nm). LF radars showed a large outer eyewall of 50-60 n mi diameter, with an inner area of convection on the NW side that dissipated later in mission. Max FL winds were 115 kt on warm side, max SF winds were 90 kt in same location.

Evaluation: (did the experiment meet the proposed objectives?) Because of the aircraft problems (air cond.) the instrumentation had problems, such as the failure of the SFA. Coordination with 42 was successful, but the major objectives of 43 were not met b/c of the cabin heat.

Problems:(list all problems)

- air conditioning failure
- SFA failure

Expendables used in mission:

GPS sondes : —
AXBTs : 4/6 worked
Sonobuoys: —

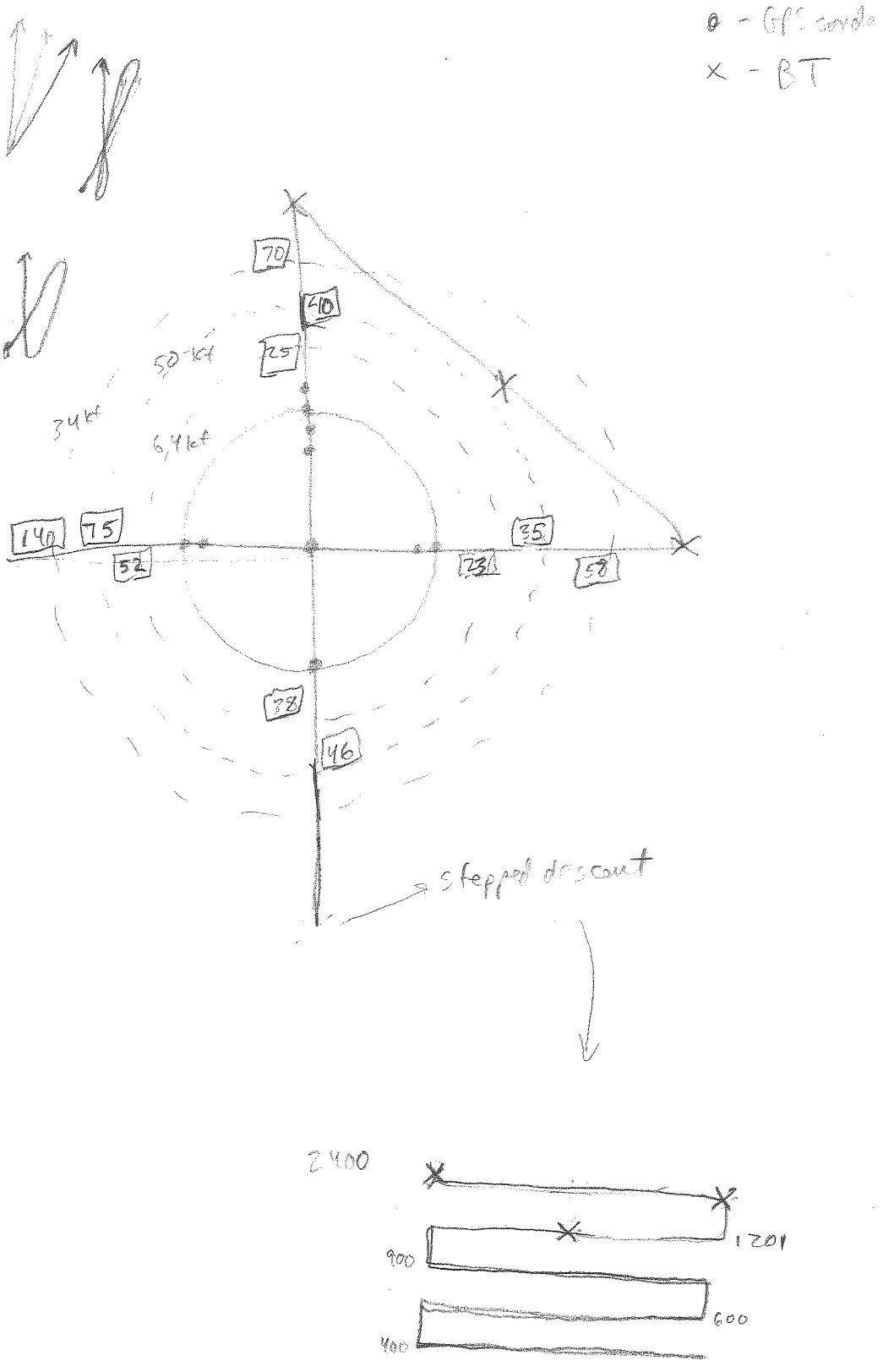
0 - GPS sonde
x - BT
70
40
25
50 kt
34kt
64kt
140
75
52
35
23
58
38
46
stepped descent
2400
1201
900
600
400

Figure 1