

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 from 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

Storm or Project T.S. Ophelia Experiment name NHC-tasking / Frequent-Monitoring
 Date 9/8/05 Aircraft N43RF Flight ID 050908II

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>Rogers</u>	Flight Director	<u>Maceaux</u>
Radar	<u>Dodge</u>	Pilots	<u>Silva, Tebeest, Choy</u>
Workstation	<u>Abramson/Dodge</u>	Navigator	<u>Gallagher</u>
Cloud Physics	<u>—</u>	Systems Engineer	<u>Lynch</u>
Photographer/Observer	<u>—</u>	Data Technician	<u>San Souci</u>
/Guests	<u>—</u>	Electronics Technician	<u>Tong</u>
Dropwindsonde	<u>Abramson</u>	Other	
AXBT/AXCP	<u>Walsh-SRA</u>		

B. Take-off and Landing Times and Locations:

Take-Off: 0735 UTC Location: MacDill

Landing: 1317 UTC Location: MacDill

Number of Eye Penetrations: —

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing:

NHC tasked fix mission into Tropical Storm Ophelia.
 Fly rotating figure-4 pattern into system, 5000ft. altitude. Drop NHC
 sondes at turn points, center, and PL RHW (see fig.). Collect radar obs, sondes
 for frequent monitoring experiment. Run TA in FAST mode for all legs except
 outbound west leg, where run in continuous mode.

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	↑	↑	↑	
AXBT/AXCP	O	O	O	
Ozone instrument	—	—	—	
Workstation	↑	↑	↑	
Videography	O	O	O	

REMARKS:

Lead Project Scientist Event Log

Date 9/8/05 Flight 05090881 LPS Rejers

	Time	Event	Position	Comments
	0735	takeoff	MacDill AFB	takeoff from MacDill
	0757	pattern, obs	20 nm from IP	descend to 5000 ft, system evident on LF, line of strong convection on S side of center
N	0802	drop 1	at IP SW of center	FL 26 kt, SF 24 kt
N	0804	drop 2 (backup)	at IP	FL 30 kt, SF 32 kt
	0806	radar	50 nm SW of eye	eye clear on LF, TA shows broad stratiform shield core, some convective cells off to right of A/C at 10-20 km distance
	0813	radar	25 nm SW of eye	in a clear slot on LF, band wrapped around SW side of storm at about 45 nm from center
N	0814	drop 3	21 nm SW of eye	PL 50 kt, SF 50 kt, GPS 56 kt
	0818	radar	in eye	primary band wrapping around east and S side of storm
N	0819	fit, drop 4	28° 44' 79° 34'	Min SLP 985 (extrap); GPS 987
	0820	winds	in eye	peak PL 53 kt, SF 50 kt on SW side
N	0822	drop 5	8.5 nm from center	FL 52 kt, SF 45 kt
	0827	winds, obs	35 nm from center	peak PL 63 kt, SF 52 kt NE of center; bands on NE side
	0832	radar	60 nm NE of center	storm echo 75 nm NE of center, 40-45 dBZ on LF
	0838	radar		strong convective cells on NE side, cloud tops 12-14 km, ref. about 40-45 dBZ in subcloud layer; multiple bands on NE side w/ embedded deep convective cores on LF

Lead Project Scientist Event Log

Date 9/8/05 Flight 050908II LPS Rogers

Time	Event	Position	Comments
0846	turn	105 nm NE of eye	turn to track 270
0848	drop 6	" "	FL 25, SF 24 kt
0854	radar	90 nm NE of eye	broad rain rainband
			100 nm from center, inner
			band about 50 nm from center
0910	radar	90 nm NW	TA radar frozen, reset
0921	turn	105 nm NW of center	turn to track 135
0922	drop 7	" "	FL 33 kt, SF 25 kt
0943	data	20 nm NW of center	sent Doppler analyses to MPD
0945	drop 8		from 1st pass
			FL 46 kt, SF 40 kt
0946	winds, obs	in center	peak FL 52 kt, SF 50 kt on NW side
			no real convection on NW side,
			some stratiform
0948	fix, drop 9	28°43' 79°34'	extrop SLP 986.5, GPS 989
0952	drop 10	16 nm SE of eye	FL 50, SF 50 kt
0957	winds	30 nm SE of eye	peak FL 53 kt, SF 53 kt on SE side
1004	obs	60 nm SE of eye	light rain on this side
1015	turn	105 nm SE of eye	turn to track 025
1016	drop 11	105 nm SE of eye	FL 30, SF 20 kt
1021	radar	120 nm ESE of eye	line of isolated convective
			cells about 120 nm NE of eye
1035	turn	105 nm E of eye	turn to track 270
1035	drop 12	" "	FL 35, SF 10 kt
1037	radar	100 nm E of eye	strong convective echoes 15 nm
			N of a/c
1056	obs	28 nm E of eye	going thru summer rain

Lead Project Scientist Event Log

Date 28/05

Flight 0509 0871

LPS Rogers

	Time	Event	Position	Comments
N	1056	drop 13	25 nm E of eye	FL 50, SF 43 kt
N	1057	drop 14 (backup)	" "	FL 46 kt, SF 45 kt,
				SFMR spiked to 57 kt, coincided w/ 20 mm/hr
	1101	obs	in center	mostly clear above, some
				cirrostratus
N	1108	fix, drop 15	28° 38' 79° 34'	extrap 987, GPS 989
→	1110	radar	in center	clearing, rain all around eye,
				eye about 30 nm; indiameter
N	1113	drop 16	40 nm W of center	FL 50 kt, SF 40 kt
	1120	turn	45 nm W of center	turn to track 150
	1109	radar	in center	put TA in continuous mode
	1123	radar	4.5 nm WSW of center	put TA back in PHS mode
	1147	turn	105 nm S of center	turn to track 0
N	1148	drop 17	105 nm S of center	FL 26 kt, SF 13 kt
	1152	pattern change	85 nm S of center	NHC was released plane, will
				now shorten outboard leg on N side
				to 50 nm
	1207	winds	near S eyewall	peak FL 55, SF 45 kt on
				S side
	1213	obs	in center	extrap SLP 987.5 mb
	1224	winds	37 nm N of center	max FL winds 45 kt, SF 45 kt
				on N side
	1225	radar	42 nm N of center	Combination convective/
				stratiform rain here,
				band about 50 nm, another
				about 100 nm N of center
	122732	turn	50 nm N of center	turn to track 260, RTB

1317

landing

MacDill

Land at MacDill

Mission Summary

Storm name

YYMMDDA# Aircraft 43RF

Scientific Crew (43RF)

Lead Project Scientist Rogers
Radar Scientist Rodge
Cloud Physics Scientist —
Dropwindsonde Scientist Alderson
Boundary-Layer Scientist Walsh (SFA)
Workstation Scientist Alderson / Rodge
Observers —

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

see Fig. 1 and previous

Mission Synopsis: (include plot of actual flight track)

New NHC-based mission into Tropical Storm Opalelia. Storm deepened from previous mission to 987 mb, max. surface winds of 50-55 kt. This is the fourth mission in 2 days for this storm, making it a great frequent-monitoring case. Got F/A/T data in all quadrants, was able to produce Doppler analyses and transmit them to the ground. One leg was in continuous mode for VI, cloud physics seemed to work well. A successful mission.

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

(see above)

Problems: (list all problems)

none noted

Expendables used in mission:

GPS sondes: 17 (all NHC)

AXBTs: 0

Sonobuoys: 0

Rudor
1501

~~56~~

①

②

NW

21' 51" V
74° 40' 11"

182

1hr

23.1
76.0

81000

3430

2115

330

3402

AOL
HRD

7-8

730

Takeoff
S + Crain
1455Z

2017A3
061817 R175

Radar

Down

1502-1513

67.79.162.250/19999

Table TOP

NO Security
Address

SED