Lead Project Scientist

Storm or Project TS Danny **Experiment name** TDR/Genesis
Flight ID 090827I2 **Mission ID** W42SA Danny 3

Preflight

✓ 1. Participate in general mission briefing.

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

✓ 3. Determine from AOC flight director/meteorologist whether aircraft has operational fix responsibility and the mission designation.

✓ 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.

✓ 6. 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.

✓ 7. Report status of aircraft, systems, necessary on-board supplies and crews to MGOC in Miami.

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

✓ 9. Make sure each HRD flight crew member has a life vest.

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

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. Gather completed forms for mission and turn in to data manager at HRD.

____ 3. Obtain a copy of the 10-s flight listing from the AOC flight director. Turn in with completed forms.

____ 4. Obtain a copy of the radar DAT tapes. Turn in with completed forms.

____ 5. Obtain a copy of serial flight data on thumb drive. Turn in with completed forms.

[**Note**: all data removed from the aircraft by HRD personnel should be cleared with the AOC flight director.]

____ 6. Report landing time, aircraft, crew, and mission status along with supplies (tapes, *etc.*) remaining aboard the aircraft to MGOC.

____ 7. Determine next mission status, if any, and brief crews as necessary.

____ 8. Notify MGOC as to where you can be contacted and arrange for any further coordination required.

____ 9. Prepare written mission summary using **Mission Summary** form.

Lead Project Scientist Check List

Storm or Project TS Danny **Experiment name** TDR/genesis

Flight ID 090827I2 **Mission ID** ~~WX05A~~ Danny 3

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	Rogers	Flight Director	
Radar/Workstation		Pilots	
		Navigator	
Cloud Physics		Systems Engineer	
Photographer/Observer /Guests		Data Technician	
Dropwindsonde		Electronics Technician	
AXBT/AXCP		Other	

B. Take-off and Landing Times and Locations:

Take-Off: 2006 UTC Location: KMCF

Landing: 0334 UTC Location: KMCF

Number of Eye Penetrations: —

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
27/15 Z	27.5	73.1		50
28/00 Z	28.7	73.9		50
28/12 Z	30.3	74.5		55

D. Mission Briefing: Fly another TDR/genesis-type pattern into TS Danny which has intensified minimally according to NHC, system is still highly disorganized, with exposed LLCC displaced about 120 nm from any deep convection. Visible animation shows a midlevel circulation developing in connection to the east. Fly butterfly pattern centered on MLC in connection. Set up IP further to west (~180nm) to traverse low-level swirl. Drop sonde at IP on W side of swirl, then over low-level center. Continue pattern w/ 120 nm legs, send up on NW side. Drop sondes at turn points and points, plus 1st outer pass" at FL, Drop BT's at integer longitudes on ferries, plus at turn points. Fly at 15kft until last leg swirl, then descend to

Storm or Project IsBill **Experiment name** TDR (genesis

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E. —Equipment Status (Up ↑, Down ↓, Not Available **N/A**, 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	↑			
Ozone instrument	O			
Workstation	↑			
Cameras	↑			

REMARKS:

27 15
73 20

Lead Project Scientist Event Log

Date 8/27/09 **Flight ID** 09082712 **LPS** Rogers

Time	Event	Position	Comments
2006	t/o	KMCF	t/o from MacDill
2054	BT 1	28N 79W	28.5 SST, 50 m MLD
2104	BT 2	28 78	28.3 SST, 30 m MLD
2116	BT 3		
2128	BT 4		
2142	drop 1, BT 5 combo	at IP, 180 nm E of MLC, 28N 75W	70% RH blw 8 & 4 kft; 90% below that, LL winds NE at 15 kt
2205	drop 2	28N 72.9W, near presumed LLC	SE winds in drop
2217	obs	28 72, approaching presumed MLC	FL winds at 200, SW, suggesting MLC is behind us
2223	drop 3, BT 6	at presumed MLC 28N 71.4W	FL 30, SF 40 but in heavy rain, FL wind dir. S at 30 kt
2232	obs	28 70.75	in the convection on the east side, FL winds have been consistently SW here, indicating MLC, at least not yet
2238	drop 4	midpoint of E outbound leg	FL 30, SF 35 kt, in convection
2254	drop 5, BT 7	turn point on E side	
2318	turn	NE side	turn to track 185, shifted track from 210 to 185 to stay close to convection

PL I ↓

Lead Project Scientist Event Log

Date 8/27/69 **Flight ID** 09082712 **LPS** Rogers

Time	Event	Position	Comments
2318	drop 6 BT 8	NE side of pattern	SFC wind 35 kt
2336	drop 7	mid pt of inbound NE leg	wind southerly on drop, SE winds
2350	drop 8, BT 9	"center" point	SFC 10 kt
0002	obs	27 70.5, SW of "ctr" pt	Time of strong convection, lots of lightning
0005	drop 9		wind SW aloft, turning to S below, FL winds still SW
0021	drop 10, BT 10	25.75 70.6 at SW pt of pattern	
0034	obs	nearing SE point	radar analysis on 1st leg shows eye circ. at ~5 km, peaked at 8 km, at FL just saw bottom extent of vortex. So mid-level vort was there,
0036	drop 11, BT 11	26 69.5	SFC 5 kt, winds 5 aloft above & ESE below
0050	drop 12	27 70, mid pt. of SE-NW leg	25 kt SFC
0055	obs	27.3 70.1	lightning in this convection
0104	drop 13, BT 12	27.8 70.45	SFC 30, FL 25
011723	drop 14	28.64 71.11, mid pt of last outbound	SFC 25 FL 20

Lead Project Scientist Event Log

Date _____ **Flight ID**_____ **LPS**_____

Time	Event	Position	Comments
0130	drop 15, BT13	FP at NW point	FL 17 SF 25
01 46 10	BT 14	29.2 73	SST 28.9
0156	BT 15	29.1 74	SST 28.7
0207	BT 16	29.0 75	SST 28.9
0217	BT 17	28.85 76	SST 28.9
0228	BT 18	28.6 77	SST 29.2
0238	BT 19	28.46 78	SST 29.9
0334	land	KHCF	

Mission Summary
Storm name
YYMMDDA# Aircraft 43RF

Scientific Crew (43RF)

Lead Project Scientist Rogers
Radar Scientist Corsolo
Cloud Physics Scientist —
Dropwindsonde Scientist Murillo
Boundary-Layer Scientist Rogers
Workstation Scientist Murillo
Observers —

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

See previous d attached

Mission Synopsis: (include plot of actual flight track) generally flew pattern as planned. On first W-E leg, saw wind shift at FL just displaced to E of low-level swirl. At place we anticipated mid-level center, found a wind shift line from SW to SE, suggesting a convergence line. Otherwise FL winds were southerly a southeasterly. Upon looking at radar analyses, though showed that we had circulation starting at about 6 km and peaking at 8 km. So there was a mid-level vortex, but it was above FL. Below this it was pretty strong southerlies, so no chance for reformation there. System becoming less organized. Isolated convection continues, but becoming less widespread, and always on E side. Indications dry air has wrapped around system, further choking it off. Peak SFC winds about 40 E of LLC.

Evaluation: (did the experiment meet the proposed objectives?) Mission accomplished objectives, which were to sample a system struggling to organize in shear and dry air. Targeted convection instead of low-level swirl 2 deg. to the west for radar coverage. Radar analyses in real-time produced very complex structures, including multiple vortices of different horizontal scale at diff. altitudes, ultimately system unable to reform in convection, and likely will dissipate soon. Intensity guidance all so far off. This case should provide good data to compare with models to find error sources.

Problems:(list all problems)

No problems.

Expendables used in mission:

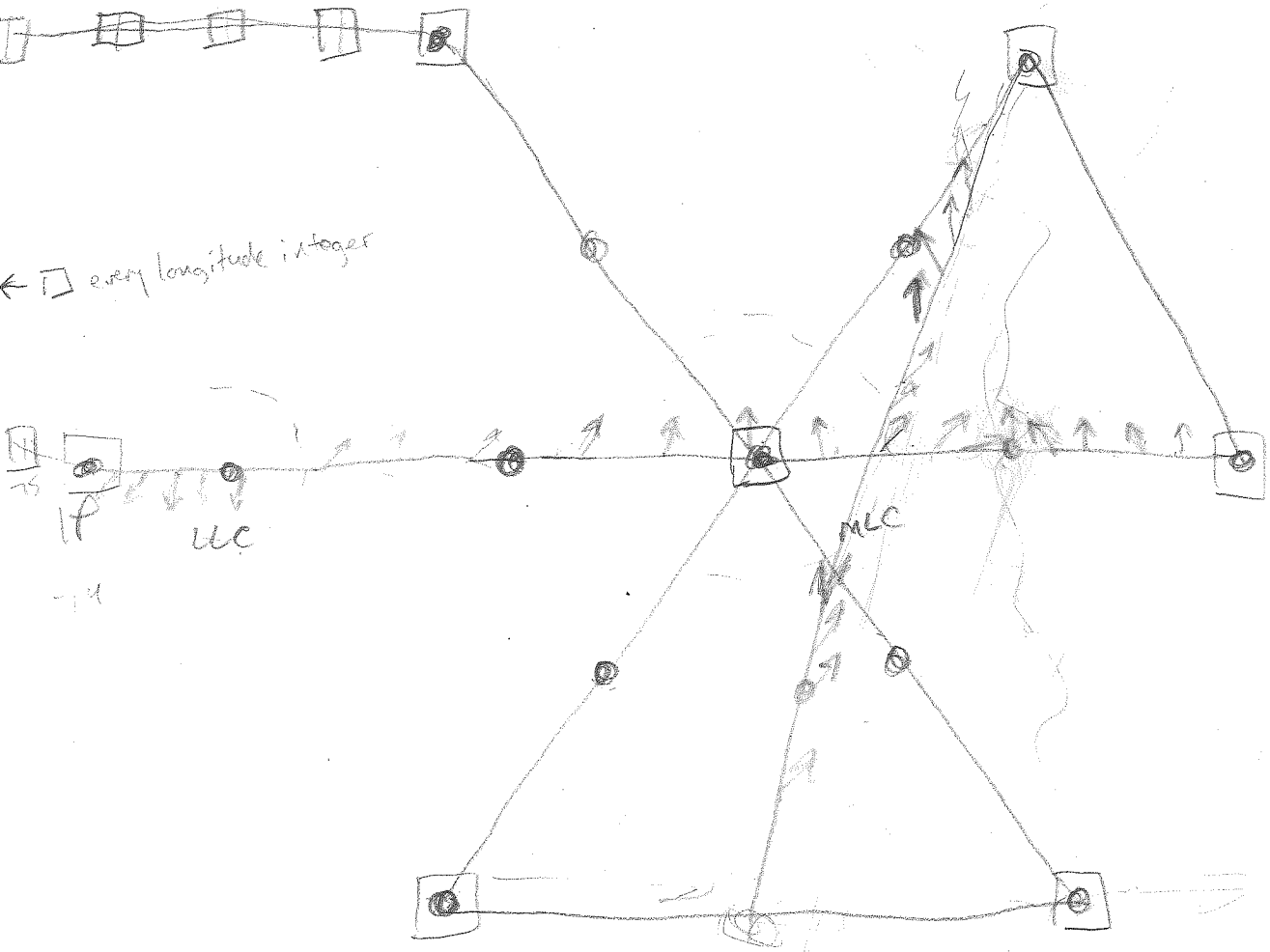
GPS sondes : 15
AXBTs : 19
Sonobuoys: —

GPS

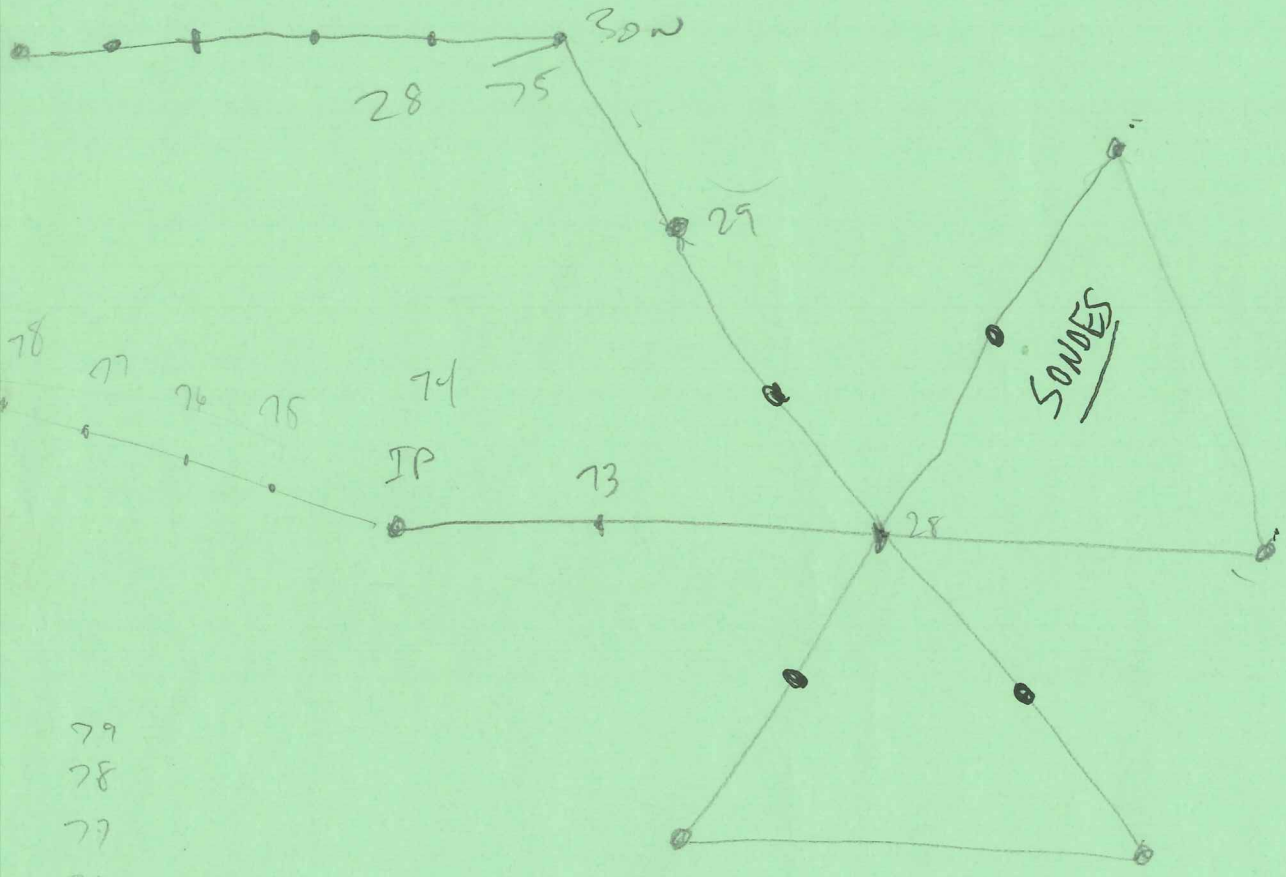
BT

LLC - low-level circulation

MLC - mid-level circulation



28 71.5



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75 (IP)
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Pattern #6

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TS Danny

Flight ID 090827I2

Mission ID WX05A Danny3