Lead Project Scientist

Date 9/3/2019 **Flight ID** 20190903H2

Storm or Project Fernand **Experiment name** Recco

Mission ID 0107A Fernand

Pre-flight

- [X] 1. Participate in general mission briefing.
- [X] 2. Determine specific mission and flight requirements for assigned aircraft.
- [X] 3. Determine from AOC flight director/meteorologist whether aircraft has operational fix responsibility and the mission designation.
- [X] 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.
- [X] 5. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.
- [X] 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.
- [X] 7. Report status of aircraft, systems, necessary on-board supplies and crews to Field Program Director.
- [X] 8. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drop times.
- [X] 9. Make sure each HRD flight crew member has a life vest.
- [X] 10. Perform a headset operation check with all HRD flight crew members. Make sure everyone can hear and speak using the headset.

In-Flight

- [X] 1. Confirm from AOC flight director that satellite data link is operative (information).
- [X] 2. Confirm camera mode of operation.
- [X] 3. Confirm data recording rate.
- [X] 4. Complete Lead Project Scientist Form.
- [X] 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

- [X] 1. Debrief scientific crew.
- [X] 2. Gather completed forms for mission and turn in to data manager at HRD.
- [X] 3. Obtain a copy of the 10-s flight listing from the AOC flight director. Turn in with completed forms.
- [X] 4. Obtain a copy of the radar DAT tapes. Turn in with completed forms.
- [X] 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.]

- [X] 6. Report landing time, aircraft, crew, and mission status along with supplies (tapes, *etc.*) remaining aboard the aircraft to Field Program Director
- [X] 7. Determine next mission status, if any, and brief crews as necessary.
- [X] 8. Notify Field Program Director 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 Fernand **Experiment name** Recco

Flight ID 20190903H2 **Mission ID** 0107A Fernand

A. Participants:

Function	Participant	Function	Participant
Lead Project Scientist	Marks	Flight Director	Parrish/Flaherty
Radar	X. Zhang/Gamache ground	Pilot	Abitbol/Rossi (Adam/Joe)
Workstation	—	Pilot	Kahn (Nate)
Cloud Physics	—	Navigator	Drato (Sam)
Dropsonde	Sellwood	Systems Engineer	Richards (Todd)
Dropsonde	—	Data Technician	Mascaro (Mike)
AXBT/AXCP	—	Electronics Technicians	McAlister (Mac)
Observer/Guest	3 Teachers in the Air		
Observer/Guest		Flight Engineer	Derby/Tuffaro

B. Take-off and Landing Times and Locations:

Take-Off: 1910 UTC Location: Lakeland 28,82

Landing: _____ UTC Location: _____

Number of Eye Penetrations: _____

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
/				
/				
/				
/				
/				

D. Mission Briefing:

Alpha pattern at 2500' pressure alt with IP 105nm NE of storm

Repeat one more pass SW-NE

Storm or Project TS Fernand **Experiment name** ReCCO

Flight ID 20190903H2 **Mission ID** 0107A Fernand

E. —Equipment Status (Up **U**, Down **D**, Not Available **N/A**, Not Used **O**)

Equipment	Pre-Flight	In-Flight	Post-Flight	# DATs / CDs /Expendables/ Printouts
Radar/LF	✓	✓		
Doppler Radar/TA	✓	✓		3 TDR analyses
Cloud Physics	✓	✓		
Data System	✓	✓		
GPS sondes	✓	✓		NA
AXBT/AXCP	—	—		
Ozone instrument	—	—		
Workstation	—	—		
Cameras	✓	✓/—		

REMARKS:

IWRR was adequate but attenuation major issue

— Fig. 4 and 1/2 recco alpha pattern at 2500' pressure as planned

— very difficult to locate center with broad area of light and variable winds. Lowest wind and pressure was tucked up next to major convective cell SW of G. Lots of hunting near center but did not effect radar analyses

— TDR worked extremely well producing 3 analyses that depicted a very shallow asymmetric vortex (<2km deep) with 40-50kt wind to NW of G and 15-20kt wind SE of G

— vortex tilted downshear to WNW with 5km G. h big anvil 40-45 km from low-level G

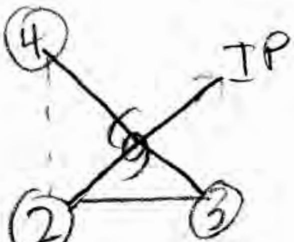
— storm will be major rain producer and flash floods likely in N. Mexico

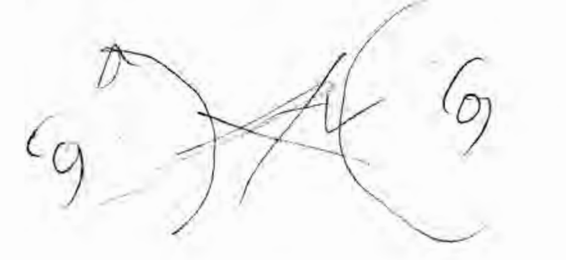
Lead Project Scientist Event

Date 9/03/2019 **Flight ID** 20190903H2 **LPS** Marks

TS Fernand

Time	Event	Position	Comments
190953	TO	Lakeland 28, 82	
200000	Turn on TDR		getting great ground return for angle corrections
2118		ATC issues delaying our descent to IP	
		orbiting near IP	
2132	(IP)	24.63 94.55	descending to 2500 ft flight level TK 225°
2139	passing through skinny rainband		
220447	6	23.2 96.1	1003 mb peak SFMR wind 34kt
2226	(2)	22.1 97.15	TK 090 to (3) few small cells on downwind leg
2256	(3)	21.93 94.93	TK 315 2500'
2323	6	23.11 96.12	1003mb
2331 start outbound	areal dogs breakfast	squirreling around major band tip of find 6 - fail	
0003	(4)	23.18 97.35	TK 180 along coast to (2)
0029	(2)	22.1 97.27	TK 045 to 6 FL2500'
0052	6	23.1 96.26	1003 mb
0122	(1)	24.14 94.75	climb out to Lakeland





Lead Project Scientist Event

Date 9/3/2019 **Flight ID** 20190903H2 **LPS** Marks
TS Fernand

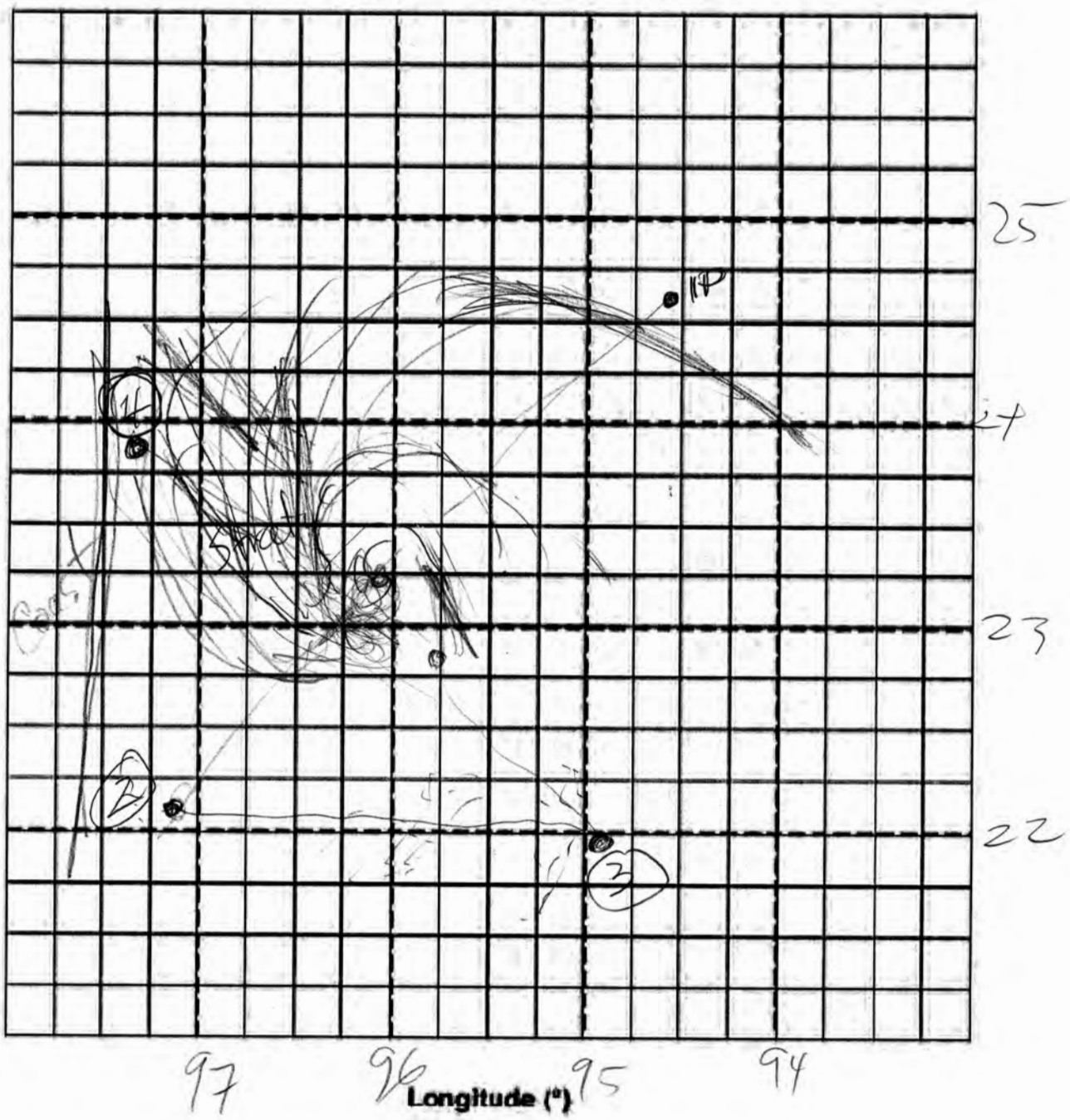
Time	Event	Position	Comments
0338	land	Lakeland	

Observer's Flight Track Worksheet

Date 9/3/2019 Flight 20190903#2 Observer Marks

TS Fernand

Use highlighter to draw freehand on chart

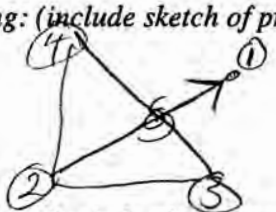


Mission Summary

20190903H2 TS Fernand

Scientific Crew (42RF)
Lead Project Scientist Marks
Radar Scientist Y. Zhang / Gamache
Cloud Physics Scientist —
Dropwindsonde Scientist Sellwood
Boundary-Layer Scientist —
Workstation Scientist —
Observers (affiliation) —

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:

	Deployed	Good	Bad
GPS sondes :	0	0	0
AXBTs :	0	0	0
Sonobuoys:	0	0	0
UAVs	0	0	0