

Lead Project Scientist

Storm or Project Chris Experiment type TDR
Flight ID 20180709H1 Mission ID AL32018

Preflight

1. Participate in general mission briefing.
2. Determine specific mission and flight requirements for assigned aircraft from the Field Program Director.
3. 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.
4. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.
5. Determine from AOC flight director the mission designation and whether aircraft has operational fix responsibility
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 Field Program Director.
8. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drops.
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. Request AOC flight director to leave radar in non-sector mode for initial Figure 4.
5. Once at IP, request AOC flight director adjust radar tilt to minimize sea clutter.
6. Complete Lead Project Scientist Form.
7. Check in occasionally 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 Dropsonde raw and processed files from the AVAPS operator on thumb drive.
4. ~~Obtain a copy of the radar LE files from the radar technician on thumb drive.~~
5. Obtain a copy of the tar'ed radar TA files from the radar scientist on thumb drive.
6. Obtain a copy of serial flight data and raw NetCDF file on thumb drive from the data technician.
7. Obtain a copy of SFMR data on thumb drive from the data technician.
8. Obtain a copy of DMT data on thumb drive from the data technician.
9. Report landing time, aircraft, crew, and mission status to the Field Program Director.
10. Determine next mission status, if any, and brief crews as necessary
11. Prepare written mission summary using **Mission Summary** form.

all FL
SFMR1
SFMR2
TDR
AVAPS
microphysics
~~MMR~~

Lead Project Scientist Check List

Storm or Project CRMS Experiment name TDR
 Flight ID 20180709H1 Mission ID AL32018

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>Kelly</u>	Flight Director	<u>Mike H.</u>
Radar/Workstation	<u>Sim</u>	Pilots	<u>Kahn Mitchell</u> <u>Domus</u>
	<u>-</u>	Navigator	<u>Richardson</u>
Cloud Physics	<u>-</u>	Systems Engineer	<u>MIKE M. Dobby</u>
	<u>-</u>	Data Technician	<u>MIKE M. Labonde</u>
Dropwindsonde	<u>Bachir</u>	Electronics Technician	<u>-</u>
AXBT/AXCP	<u>-</u>	Other <u>AVAPS</u>	<u>Hamberger</u>
Photographer/Observers/Guests	<u>-</u>		<u>Greene</u>

David Naaman
 Jeff Rice
 Yinnou Broder

B. Take-off and Landing Times and Locations:

Take-Off: 8:52 UTC Location: Lakeland
 Landing: 15:52 UTC Location: Lakeland

Number of Eye Penetrations: _____

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
<u>9 July 18 ~ 02</u>	<u>32.5</u>	<u>74.5</u>	<u>1002</u>	<u>50 kt</u>
<u>12Z</u>	<u>32.4</u>	<u>74.5</u>		<u>60 kt</u>

AF 1000ms @ ~8UTC

D. Mission Briefing:

- * VWS: 11kts @ 35°
- * Stationary-ish 2kt @ 110
- * pretty dry (~40% RH)
- * center exposed
- Ships & Lgem estimate 36hrs until cat 1 strength
- * Conv. to east of center; obvi entrain. dry air
- * signif. dry air west/north of TC
- * rotated ring (1 @ 8kft, 1 @ 10kft or higher)
- * potential sonde on transit home

* 8 sondes expected
 - 20 - on board

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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	MMR testing w/ engineers			
Doppler Radar/TA	↑	↑		
Cloud Physics	↑	↑		
Data System	↑	↑		
GPS sondes	↑	↑		
AXBT/AXCP	—	—	—	—
Ozone instrument	—	—	—	—
Workstation	↑	↑		
Cameras	↑	↑		

REMARKS:

- initial network issues due to MMR testing → resolved
- ~~potential bug in aspen (wmo message saves)~~
- make sure you click save if wmo message is changed (i.e. to add "CENTER")
- lost station 2 (ASPEN) - frozen
- we need Dfiles sent to LPS station to check wmo messages & dictate splash slip & wind to FD

Lead Project Scientist Event Log

Date 9 July 18 Flight ID 20180709H4_EPS Kelly

Time	Event	Position	Comments
8:31	takeoff	Lakeland	
8:57	approaching IP ~10min → conv. popping up near center on south side and beginning to wrap around - long range radar depicts rain (albeit less organized) - can see south-side eyewall on nose radar		
10:05	sonde 1 (IP) { 31.017 } { 77.5 } dpt 6.5°C	at 35 kt + 13°C	south end end SPMR 22 kt
10:15	satellite shows convection popping up western edge of center; there appears to be a partial eyewall SPMR 50 (RR 15) FL 50 kts		
10:23	{ 32.2 N } { 74.106 W } dpt = 12°C	sonde 2 center t = 15°C dpt = 12°C	splash 999 mb 999 mb
10:47	{ 33.71 N } { 74.45 W }	sonde 3	north end
11:24	{ 32.2 N } { 76.45 W } (slightly inside conv cell)	sonde 4	WEST end



*can see partial eyewall on west side (MMR!)
*seeing lightning 😊



Lead Project Scientist Event Log

Date 9 July 18 Flight ID 20180709H1 LPS Kelly



Time	Event	Position	Comments
1150	{ 32.18 N } { 74.49 W }	Sonde 5 (000 NWS request)	999 mb splash



	north side = very clear = '0' - hello sunshine		
12:09	{ 32.15 N } { 72.87 W }	Sonde 6	east end



12:24	{ 33.27 N } { 73.40 W }	Sonde 7	NE end
	→ climb to 10k ft		



	* missed mdpt #1	Sonde 8	missed it
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1247	{ } { }	Sonde 8	center 999 mb splash
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1257	{ 31.68 N } { 75.21 W }	Sonde 9	mid SW #2
	* dropped at tail end of strongest rainband		



1308	{ 31.17 N } { 75.83 W }	Sonde 10	* pretty clear out here at SW end
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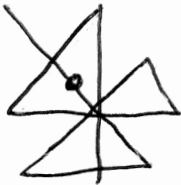
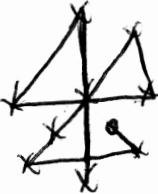
09 July 18

Lead Project Scientist Event Log

Date ~~008000~~

Flight ID 20180709M1 LPS

Kelly



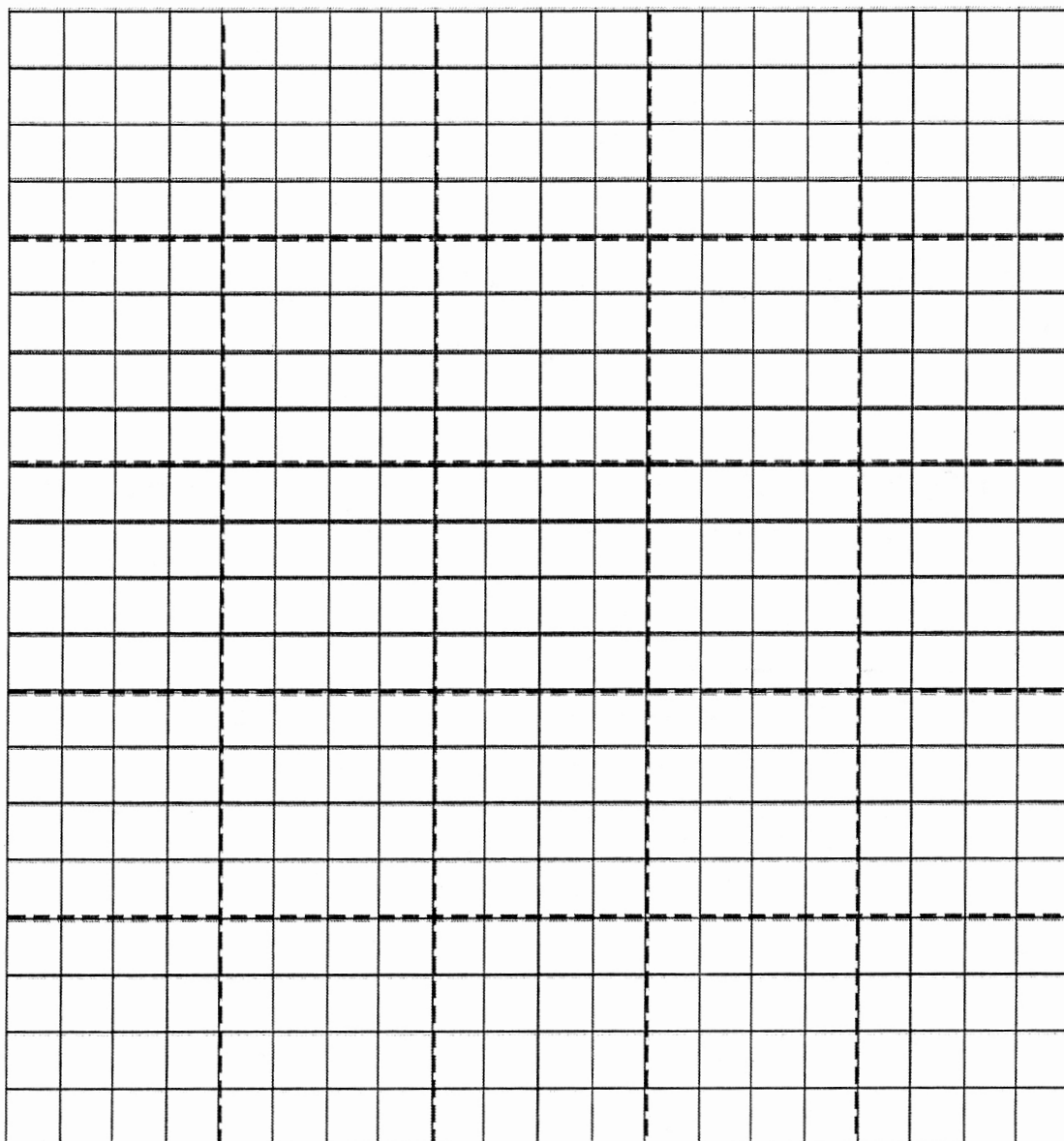
Time	Event	Position	Comments
1337	{ 31.18 N } { 73.37 W }	sonde 11	SE end
1347	{ 31.68 N } { 73.91 W }	sonde 12	SE mid * in strat rain
NO CENTER SONDE THIS LEG			
	{ 32.11 32.11 N } { 74.50 W }		center position
	{ 32.68 N } { 73.79 W }	sonde 13	mid NW
1419	{ 75.84 W } { 33.11 N }	sonde 14	end NW
1454	{ 31.07 N } { 78.01 W }	sonde 15	@ 22kft transit

* near dry region (according to TPW)
just north of convection along
boundary (SN near-TC env.)

Observer's Flight Track Worksheet

Date _____ Flight _____ Observer _____

Latitude (°)



Longitude (°)

Took pics of env. conditions instead
of drawing bc presentation changed
significantly during flight

Mission Summary

Storm name

YYMMDDA# Aircraft 4_RF

Scientific Crew (4 RF)

Lead Project Scientist Kelly

Radar Scientist Sim

Cloud Physics Scientist -

Dropwindsonde Scientist Bachir

Boundary-Layer Scientist -

Workstation Scientist -

Observers (affiliation) -

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

rotated fig 4 (start S); 1 @ 8kft, 1 @ 10kft



Mission Synopsis: (include plot of actual flight track)

- * WENT AS EXPECTED
- 3 research sondes (mid-pt) ^{SW SENW}
- 1 transit

* MMR LOOKS much better!

* TDR & sondes successful

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

TC started (& ended) asymmetric, but changed orientation throughout mission. Begin: heavy con w/s of center end: heavy con. e/n of center. Saw partial rainbands throughout flight corresponding to said convection

Problems: (list all problems)

radial Snogood
So no MMR data

- * Aspen workstation froze 2x
- LPS moved to this seat & Aspen used on LPS workstation
- using station 2 for LPS is not recommended in future...

Expendables used in mission.

GPS sondes 15

AXBTs 0

Sonobuoys: 0

(could not load satellite or any website under 20-30 min even NHC homepage.)

~~etc~~