Lead Project Scientist

Storm or Project TD03 **Experiment type** TDR
Flight ID 20180708H1 **Mission ID** 0303cadwis

Preflight

X 1. Participate in general mission briefing.

X 2. Determine specific mission and flight requirements for assigned aircraft from the Field Program Director.

X 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.

X 4. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.

X 5. Determine from AOC flight director the mission designation and whether aircraft has operational fix responsibility.

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 drops.

X 9. Make sure each HRD flight crew member has a ~~life vest~~. SWITUK

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. Request AOC flight director to leave radar in non-sector mode for initial Figure 4.

X 5. ~~Once at IP, request AOC flight director adjust radar tilt to minimize sea clutter.~~ N/A

X 6. Complete Lead Project Scientist Form.

X 7. Check in occasionaly 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 Dropsonde raw and processed files from the AVAPS operator on thumb drive.

X 4. ~~Obtain a copy of the radar LF files from the radar technician on thumb drive~~.

X 5. Obtain a copy of the tar'ed radar TA files from the radar scientist on thumb drive.

X 6. Obtain a copy of serial flight data and raw NetCDF file on thumb drive from the data technician.

X 7. Obtain a copy of SFMR data on thumb drive from the data technician.

X 8. Obtain a copy of DMT data on thumb drive from the data technician.

X 9. Report landing time, aircraft, crew, and mission status to the Field Program Director.

X 10. Determine next mission status, if any, and brief crews as necessary.

X 11. Prepare written mission summary using **Mission Summary** form.

✓TDR raw
✓TDR analysis
✓SFMR 1
✓SFMR 2
✓Sondes
✓FL
~~MMR~~ ~~no~~ good!

Lead Project Scientist Check List

Storm or Project TD03/TSChris **Experiment name** TDR

Flight ID 20180708H1 **Mission ID** 0303ACHRIS

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	K Ryan	Flight Director	M Holmes
Radar/Workstation	S Aberson	Pilots	Kahn, Mitchell Dorrus
		Navigator	Richards
Cloud Physics	—	Systems Engineer	MikeM
		Data Technician	Mike M.
Dropwindsonde	Bachir	Electronics Technician	
AXBT/AXCP	—	Other AVAPS	Hartberger
Photographer/Observers/Guests	— Miguel		

B. Take-off and Landing Times and Locations:

Take-Off: 833 UTC Location: Lakeland

Landing: 1703 UTC Location: Lakeland

Number of Eye Penetrations: n/A

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
8July:0545Z	32.2	75.5	1014	25 kts
8July: 1200Z	32.8	74.9	—	40kts
potential development ~72hours				
→ this dpd during the				

D. Mission Briefing:

* initial figure-4 w/ endpt and center drops, followed by circ. nav. @ 70nmi w/ drops every 45° ; 13 total expected sondes
* storm presentation: broad circulation w/ convection to south along E-W direction; exposed center; front to North; motion = 0kts

Storm or Project TS Chris **Experiment name** TDR

Flight ID 20180708H1 **Mission ID** 0303achris

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	—	—	—	—
Workstation	↑	↓ and fixed many times	—	—
Cameras				

REMARKS:

* Newest version of Aspen not on workstation (except Flight director) → downloading from NCAR site. (YAY for Sim!)
* No MMR today :(
* multiple issues w/ radar workst. (~~trackpad?~~ nope)
* Continuing workstation issues
  - LPS & radar
    - LPS → cursor disappears then all control is lost (keyboard ~~trackpad~~)
    - radar → no control

Lead Project Scientist Event Log

Date 7/8/18 Flight ID 20180708H1 LPS Kelly

Time	Event	Position	Comments
	takeoff		← West end pt.
10:11	IP	33.2 77.6	sonde released (1)
10:28	center →	N/A	↳ RH sensor failed?
	(no center found at this location)		
	→ NO SONDE!		
10:34	10° turn (5 ft) to paint convection & avoid growing finger ahead → hey look... the center ☺		
10:44	center?		
		{33 16' N} {75 05' W}	sonde rel. (2)
			↳ RH sensor failed??
	* MMR display gives little situational awareness → nose is better... ??		
~~11:10~~			sonde rel. (3) ↳ [redacted]
		{33. 18' N} {~~73 27~~ W}	[redacted] east endpt
	→ just beyond new band of convection (this was super turbulent)		
11:12	downwind turn (from 90 to 0)		
	→ clear; no conv. at all		
11:52	TDR/LPS workstations are up BUT		
	→ data flow issue.		ITS WORKING YAHAAY!!
11:58		{35 02' N} {75 04' W}	North end pt
			[redacted] sonde rel. (4)
			↳ RH sensor failed!
12:30	{32.9 (75.1	[redacted] N W}	FL center fix

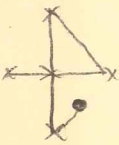
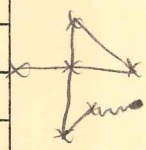
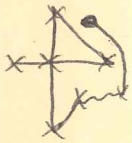
flying (mostly) blind here due to workstation issues & set 5 →

RH sensor: 100% to surface (obvi not 100% to surf.)?

Lead Project Scientist Event Log

Date 7/8/2018 Flight ID 20180708H1 LPS Kelly

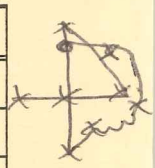
Time	Event	Position	Comments
12:57		31.18 N 71.19 W	Sonde release (5) ↳ South and pt
AND	NOW WE CLIMB to 20 kft		
		31.96 N 74.16 W	Sonde rel (6) circumnav #1 drop
13:33	SAW ice on wing: chipped away FL temp ~-8°C wind ~16 kt ⇀ * currently under cirrus shield * jogging around convection		
13:48(ish)		32.28 N 75.39 W	Sonde rel (7) circ. #2
13:54	* descend within	(pilots can't see b/c shield)	
14:01	* 10 kft	due east of last fix	
			Sonde ?!
14:35	33.9 N 73.9 W		Sonde (8) circ. #3
CLIMBING AGAIN!			

Lead Project Scientist Event Log

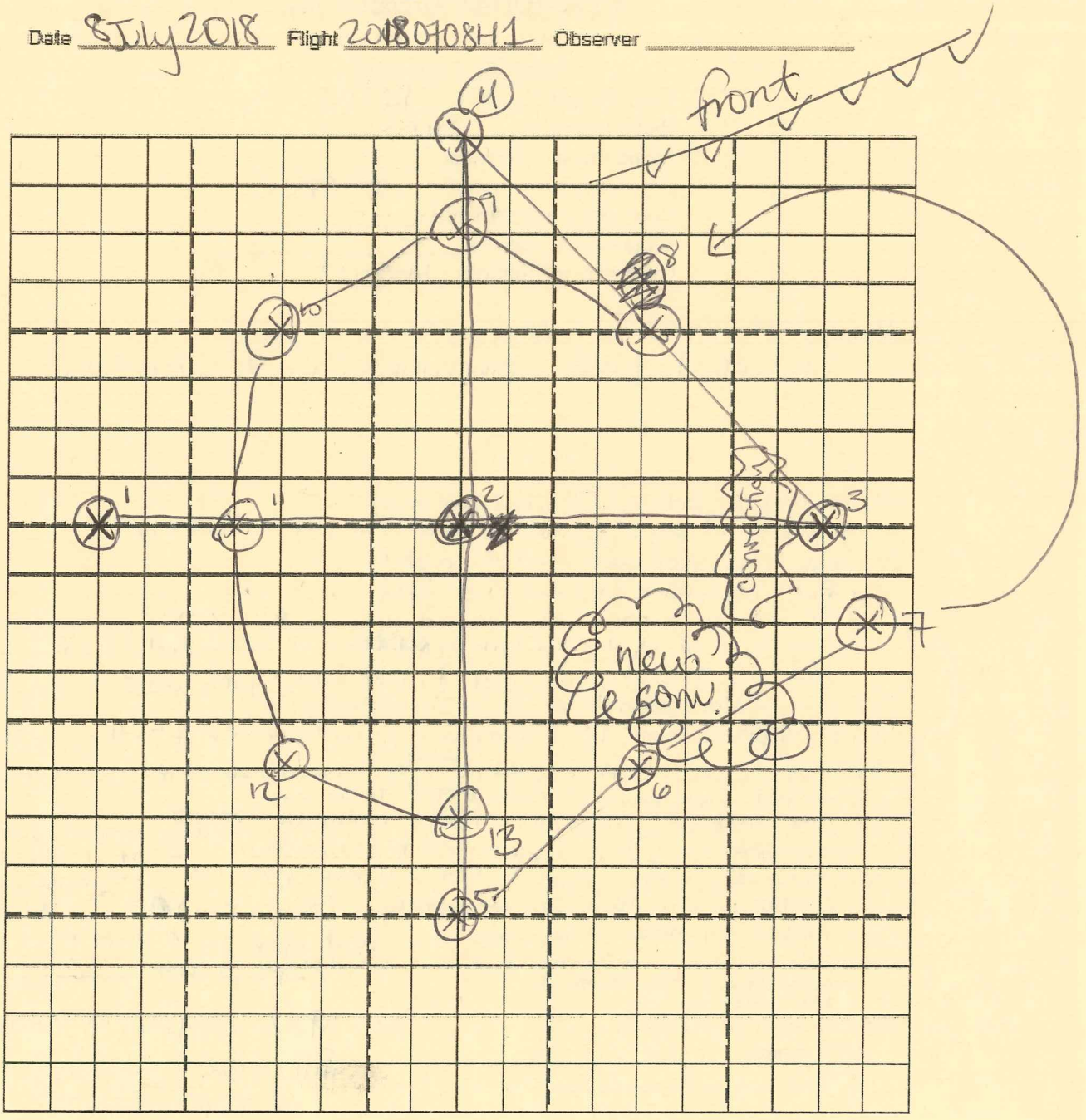
Date 8 July 18 Flight ID 20180708H1 LPS Kelly

Time	Event	Position	Comments
14.45	34.05 N 74.99 W	~5200 meters T ~ -2.8°C	Sonde (9) circ. #4
14:56	33.71 N 76.02 W	~20 kft T ~ -3°C	Sonde (10) circ. #5
15:06	32.94 N 76.45 W	~6400m	Sonde (11) circ. #6
15.16	32.01 N 76.09 W		Sonde (12) circ. 7
15:26	31.73 N 75.32 W		Sonde (13) circ. 8



Observer's Flight Track Worksheet

Date 8 July 2018 Flight 20180708H1 Observer _____



[redacted]

It would be nice to have this multiple times since TC changes quite a bit during each mission

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) Miguel

Mission Briefing: (include sketch of proposed flight track or page #)
figure-4 plus circumnav @ 70 nautmi

Mission Synopsis: (include plot of actual flight track)
- much of 1st leg + downwind spent fixing issues (below), but TDR analyses were not delayed.
- fig. 4 completed as planned @ 8kft
- circumnav: altitude fluctuated between ~10-20 kft; problems arose due to lack of visual (pilots) so we descended for a few sondes
- all 13 sondes processed & TDR analyses were successful

Evaluation: (did the experiment meet the proposed objectives?)
- as approaching IP, convection near Ft Center & to the south
- wrapped around east side & broad cirrus shield developed as we started circumnav.; conv. popped in SW quad.
- SFMR intensity reached ~40kts, mslp est ~ 1006mb
- estimate that 1st center fix was to far north; 2nd fix looked spot on

Problems:(list all problems) can I list all non-problems? ☺
- ASPEN not available on workstations (except FD) # → Mike H. processed first 5 sondes
- Radar workstation → no control → swapped disk 2x & then fine
- LPS workstation → no cursor, no control (end of flight, fix after landing)
- RH sensor (some sondes)
- MMR not usable

Expendables used in mission:
GPS sondes : 13
AXBTs : 0
Sonobuoys: 0

- when copying to external disk, file size limit set to some # ⇒ TDR jobfiles (tar, zipped) could not be saved (~5.6G)