Lead Project Scientist

Storm or Project TS KARL **Experiment name** RAPX
Flight ID 20160923I2 **Mission ID** W112A KARL

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 KARL **Experiment name** RAPX

Flight ID 20160923I2 **Mission ID** WI2A KARL

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	BUCCI	Flight Director	BELSON/SEARS
Radar/Workstation	KLOTZ	Pilots	PRICE KAHN/REES
		Navigator	SIEGEL
Cloud Physics		Systems Engineer	HEYSTEK
		Data Technician	NAEHER
Dropwindsonde	CHRISTOPHERSEN	Electronics Technician	PEEK, HARTBERGER
AXBT/AXCP		Other SAPP	
Photographer/Observers/Guests			

B. Take-off and Landing Times and Locations:

Take-Off: _____UTC Location: STX

Landing: _____UTC Location: _____

Number of Eye Penetrations: _____

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing:

TS Karl is 50 kts traveling N at 10 kts ~750 miles away from St. Croix. Convection is centered over LLC, with a band stretching out to the east. Shear 10-15 kts south easterly. Flight pattern is a butterfly with regular drops at the mids, combo BTs and IR sondes & or regular at end pts (depending on rain rate). If time, SFMR high incidence module.

Mission Summary
Storm name
YYMMDDA# Aircraft 43RF

Scientific Crew (43RF)
Lead Project Scientist Bucci
Radar Scientist KLOTZ
Cloud Physics Scientist
Dropwindsonde Scientist CHRISTOPHERSEN
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)
Karl had continued move N at 10 kts, The main convection in the NW has grown. FL winds of over 70 kts were observed in S and SFMR of around 58 kts. Large decrease of winds w/ height in BL observed by sondes. Shear still keeping the S and E drier.

Evaluation: (did the experiment meet the proposed objectives?)
Completed pattern as planned. Did 5 IR sondes and 8 regular sondes completed an SFMR high incidence module on west side, may have been in too weak winds (need to confirm with Heather Holbach).

Problems: (list all problems)
BT externally mounted malfunctioned → launched early
Replaced with internally launched BT
some BTs had scattered data initally

Expendables used in mission:
GPS sondes : 13 (5 IR, 8 regular)
AXBTs : 7 (1 failed)

Sonobuoys:

PIUK JE

Lead Project Scientist Event Log

Date Sept 23, 2016 **Flight ID** 20160923I2 **LPS** BUCC1

Time	Event	Position	Comments
1738	take off	STX	
1806	ABTX launch	19°26' 104°45'	no light indicating
			it was in tube → launched
			to be safe
1946	IR sonde/BT 1	S endpt	rain free 255° 25 kts
	↑ free chute		BT 28.4°C IR 28.4°C
1959	sonde 2	S midpt	260° 43 kts
2015	Sonde 3	29°55' 65°26'	center 85° 26 kts 992mb
2029	sonde 4	N midpt	
2042	IR/BT 5	N endpt	rain, but low dBz (<20) BT 21.10C → scattered
			IR 28.6°C
2118	IR/BT 6		BT 29.1°C → scattered IR 29.2°C
2118	45° circle 1		
21 2150	circle 3		
21 2320	30° circle 1		high incidence
2125	circle 2		SFMR
2127	circle 3		
2131	15° circle 1		
2148	end of circles	Ept	
2200	sonde 7	E midpt	heavy rain 360° 56 KTS
2216	center fix	30°04' 65°32'	
2228	sonde 8	SW midpt	250° 42 kts
2340	IR/BT 9	SW endpt	BT 28.6° IR 27.8°
		[illegible]	190° 32 kts
2312	IR/BT 10	NW endpt	BT 28.1°C
			IR 27.7°C 135° 36 kts
2325	Sonde 11	NW midpt	100° 49 kts

Lead Project Scientist Event Log

Date Sept 23, 2016 **Flight ID** 20160923I2 **LPS** BUCC1

Time	Event	Position	Comments
2337	center fix	30°12' 65°18'	
2346	sonde 12	SE max (late)	max wind 295° 38 kts
0005	BT/Sonde 13	SE end	28.3°C