Rogers
050827 I

Lead Project Scientist

Preflight

___ 1. Participate in general mission briefing.

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

___ 3. Determine from field program director whether aircraft has operational fix responsibility and discuss with AOC flight director/meteorologist unless briefed otherwise by field program director.

___ 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.

___ 5. 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.

___ 6. Report status of aircraft, systems, necessary on-board supplies and crews to appropriate HRD operations center (MGOC in Miami).

___ 7. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drop times.

___ 7. Make sure each HRD flight crew members have life vests

___ 7. Perform a headset operation check with all HRD flight crew members. Make sure everyone can hear and speak using the headset.

___ 8. Collect "mess" fee ($2.00) from all on-board HRD flight crew members.

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

___ 3. Gather completed forms for mission and turn in at the appropriate operations center. [Note: all data removed from the aircraft by HRD personnel should be cleared with the AOC flight director.]

___ 4. Obtain a copy of the 10-s flight listing from the AOC flight director. Turn in with completed forms.

___ 5. Obtain a copy of the radar DAT tapes. Turn in with completed forms.

___ 6. Obtain a copy of the all VHS videos form aircraft cameras (3-4 approx.). Turn in with completed forms.

___ 7. Obtain a copy of CD with all flight data. Turn in with completed forms.

___ 8. Determine next mission status, if any, and brief crews as necessary.

___ 9. Notify MGOC as to where you can be contacted and arrange for any further coordination required.

___ 10. Prepare written mission summary using **Mission Summary** form (due to Field Program Director a week after the flight).

Lead Project Scientist Check List

Storm or Project Katrina **Experiment name** NHC tasking/RAWBX
Date 8/27/05 **Aircraft** N43RF **Flight ID** 050827I

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	Rogers/Snell	Flight Director	Damiano/Mayeaux
Radar	Gamache	Pilots	Silah/Strong
Workstation	Gamache	Navigator	Brakob
Cloud Physics	—	Systems Engineer	Lynch
Photographer/Observer /Guests	USA Today reporter/ photo.	Data Technician	SanSouci/Olney
Dropwindsonde	Gamache	Electronics Technician	Lynch
AXBT/AXCP	—	Other	

B. Take-off and Landing Times and Locations:

Take-Off: 1335 UTC Location: MacDill AFB

Landing: 2108 UTC Location: MacDill

Number of Eye Penetrations: 4

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

D. Mission Briefing:

NHC-tasked SFMR/fix mission into Katrina, fixes at 15, 18, 21 UTC. Katrina is a Cat 3 storm now, with broad rain shield on east side of storm. Set up IP 105 km NE of center, conduct rotating fig. 4's (see fig.). On 2nd downwind leg, modify track a little to parallel inner edge of rainband. Coordinate w/ NHC A-3 during this leg. Fly at 10,000 ft.

E. —**Equipment Status** (Up ↑, Down ↓, Not Available —, 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	O			
Ozone instrument	O			
Workstation	↑			
Videography	↑			

REMARKS:

Lead Project Scientist Event Log

Date 8/27/05 **Flight** 050827I **LPS** Rogers

Time	Event	Position	Comments
1335	takeoff	MacDill	TO from MacDill
1345	pattern	near coast	heading to IP 105 nm NE of center, at 24°30' 85°06'
1409	pattern	40 nm from IP	smoke in cockpit, searching for source, turning from storm to find problem
1410	obs	44 nm NE of IP 150 nm NE of ctr	FL winds 42 kt, SF 35 kt
1414	flight	38 nm from IP	problem isolated to cockpit nose radar display, proceeding toward storm
1417	obs	25 nm from IP	eye apparent on LF, 150nm at 220 heading
1418	pattern	130 nm from ctr	descending to 10,000 ft
1423	obs	105 nm from ctr	FL 50 kt, SF 42 kt
1424	drop 1	at IP, 105 nm NE ctr	FL 50 kt, SF 40 kt, 45 kt GPS
1428	winds	92 nm from eye	FL 52 kt, SF 42 kt
1433	radar	76 nm from eye	principal band about 25 nm S of a/c, extending toward SE, determining rate where 105 nm will situate us.
1436	obs	60 nm from eye	going thru prin. rainband now, FL 75 kt, SF 60 kt, outer eyewall 25 nm ahead

est. 15 pos.
24 30
85 06
275@6

Lead Project Scientist Event Log

Date 8/27/05 **Flight** 050827I **LPS** Rogers

Time	Event	Position	Comments
1441	obs	45 nm NE of eye	FL 85 kt, SF 85 kt, extrap SLP 979 mb
1443	drop 2	38 nm from ctr	FL 85 kt, SF 80 kt
1448	winds	15 nm from ctr	FL winds peaked at about 85 kt, SF at 80 kt a few nm inward
1450	obs	in eye	no sharp wind peak on inner eye; outer eyewall has already taken over
1455	pattern	in eye	searching for center; small eye, difficulty finding ctr
1505	obs	in eye	clear in midlevels, clouds above a/c
1508	radar	in eye	outer eyewall open on NW side
1513	fix	24°28' 85°05'	extrap. SLP 945; GPS 949 mb
1535	pattern	in eye	still in eye, calling in for ex message
1540	drop 4	SW eyewall	FL 80 kt, SF 70 kt
1558	turn	105 nm SW of storm	turn to track 80
1600	drop 5	SW of storm	FL 45 kt, SF 40 kt
1614	drop 6	S of eye (70 nm)	FL 60 kt, SF 55-60 kt
1622	radar	70 nm SE of eye	multiple lines of isolated convective cells, separated by about 15 nm
1629	turn	105 nm SE of eye	turn to track
1630	drop 7	at turn SE of eye	FL 70 kt, SF 55 kt

1514 drop 3 eye drop

NRL way points

24.6 82.1

N 25.8 82.1 → NW 26 82.8 → 26.5 84.5 W

NW 26.5 83.5

Lead Project Scientist Event Log

Date 8/27/05 **Flight** 050827I **LPS** Rogers

Time	Event	Position	Comments
1631	obs	105 nm SE of eye	going thru bands, moderate drop, ~10 m/s updraft
1638	instrum.	95 nm SE of center	Radar system has been intermittent throughout flight
1643	flight	30 nm SE of eye	approaching
1643	drop 8	30 nm SE of eye	FL 94 kt, SF 85-90 kt
1650	winds	in eye	FL outer 100 kt+, SF outer 95 kt
			FL inner 90 kt, SF inner 90 kt
165130	drop 9	24°21' 85°16'	extrap 945 mb
1655	drop 10	NW outer eyewall	
1722	drop 11	turn at point NW of eye	FL 97 kt SF 90 kt
1731	drop 12	down wind leg on W side of storm	FL 50 SF 42 AOC sonde
1734	turn	105 nm W of eye	turn to track 090
1738	drop 13	85 nm W of eye	FL 50 kt, SF 45 kt
1750	drop 14	W eyewall	FL 85 kt, SF 70 kt
1753	pattern	in eye	24 N 83 W - proposed IP for 43 to begin Coord. w/ NRL
1755	winds	eye	peak FL on W side 90 kt, SF 80 kt
1759	fix, drop 15	24°27' 85°19'	extrap SLP 945; GPS 947
1801	obs, drop 16	in eye, inner eyewall	passed thru remnant inner eyewall, max FL 75 kt, SF 70 kt
1805	obs	outer E eyewall	
1806	drop 17	E eyewall	FL 100 kt, SF 90 kt
1810	obs	50 nm E of eye	widespread rain, strat. w/ some moderate drop

24 N 83 W

fast fall, NRD

43 way points

24 83 1835 25 84 1855

25 83.5 1850 25 84.5 1905

130°
40 nm

Lead Project Scientist Event Log

Date 8/27/05 **Flight** 050827I **LPS** Rogers

Time	Event	Position	Comments
1826	drop 18	105 nm E of eye	FL 55kt SF 40kt
1831	pattern	near beginning of RAINEX coord.	waypoints for 43: ① 24 83.4, ② 25 83.5, ③ 25 84, ④ 25 84.5
1836	pattern	24°3' 83°25'	begin RAINEX coord.
1836	drop 19	24°3' 83°25'	1st RAINEX drop; FL 55kt SF 50kt
1844	pattern		24°35' 82°46' → NRL 24°45' 83°28' / N43 pts at this time
1847	turn	25° 83°30'	turn to 270, pt 2 of coord. pass
1849	drop 20	25° 83°35'	FL 55kt SF 45kt
1854	drop 21	25° 1' 84° 2'	FL 60kt SF 50kt
1900	drop 22	24°59' 84°32'	FL 75kt, SF 50kt
1908	turn	25°5' 85°14'	turn to track 340, heading to ctr of storm
1911	turn	25°20' 85°22'	turn to track 360
1917	pattern change	25°31' 85°21'	changing pattern; going outbound to N, then downwind to NW, then inbound for final fix, then home
1926	drop 23	26°10' 85°18'	AOC downwind leg drop
1942	turn	105 nm NW of eye	turn to track 135
1944	drop 24	after turn	FL 45kt, SF 40kt
1945	drop 24a (backup)	same as above	backup drop
1955	obs	25°4' 86°9'	approach NW eyewall, still open on NW
2000	drop 25	NW outer eyewall	max FL 80kt, SF 70kt
2006	winds	in western part of eye	missed inner wind max, peak FL of 90kt, SF 80kt
2009	fix, drop 26	24°33' 85°23'	extrap SLP 941 mb; GPS 945
2012	obs	NE inner eyewall	going thru inner eyewall, peak FL 90kt, SF 75kt
2015	drop 27	NE outer eyewall	FL 60kt, SF 85kt
2017	drop 27a	backup to previous	FL 94kt, SF 70kt
2034	drop 28	25°48' 83°54'	
2108	Landing	NE point MacDill	Landing at MacDill AFB

RAINEX
24
83.4
NRL RX
RX

Mission Summary

Storm name

YYMMDDA# Aircraft 43 RF

Scientific Crew (4 RF)

Lead Project Scientist Rogers
Radar Scientist Smull
Cloud Physics Scientist —
Dropwindsonde Scientist Gamache
Boundary-Layer Scientist —
Workstation Scientist Gamache
Observers —

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

see previous

Mission Synopsis: (include plot of actual flight track)

rotating fig-4 to map out sfc wind field and make 3 tasked fixes at 15, 18, 21 UTC. On NE downwind leg coordinated w/ NRL on opposite side of PRB. Fairly good coordination, w/ about 30 nm spacing b/w aircrafts. Storm was pretty steady-state, undergoing eyewall replacement cycle. MSLP went from 949 to 945 mb.

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

Yes, obtained necessary fixes, SFMR, Doppler radar analyses. Radars were a bit flaky today. Coordination w/ NRL worked pretty well.

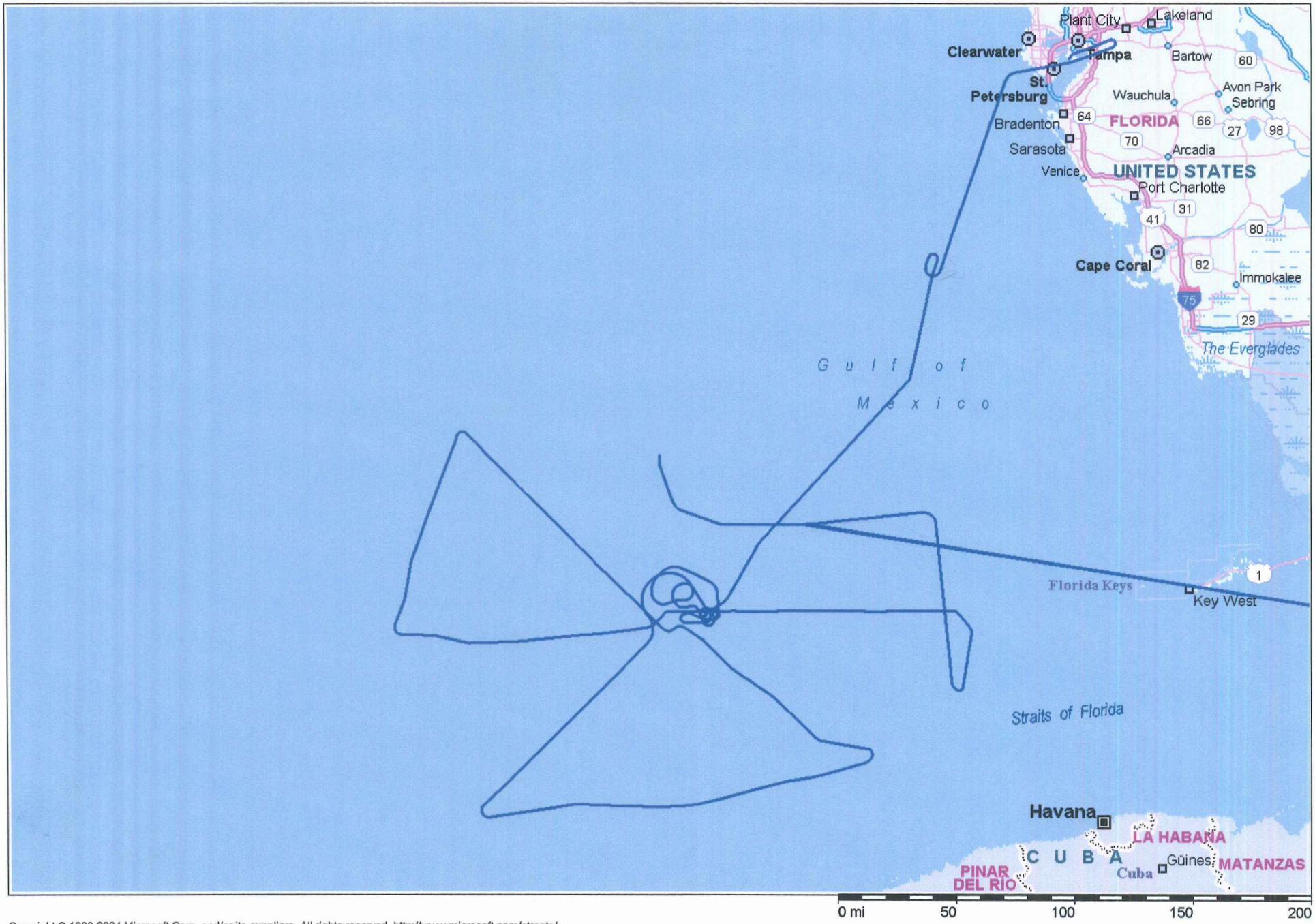
Problems:(list all problems)

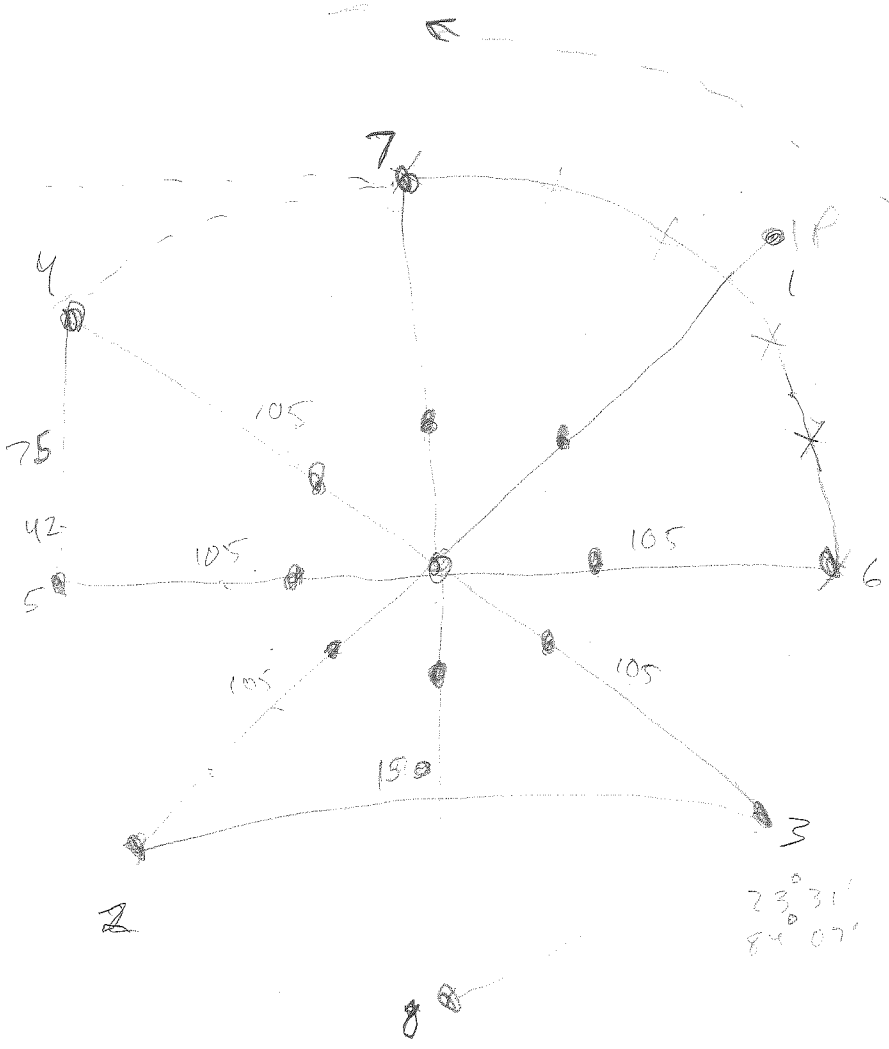
no major problems. All instruments worked well. Radars intermittently went out, but were up for majority of time. LF transmission was reliable.

Expendables used in mission:

GPS sondes : 30 (NHC)
AXBTs : —
Sonobuoys: —

katrina082705

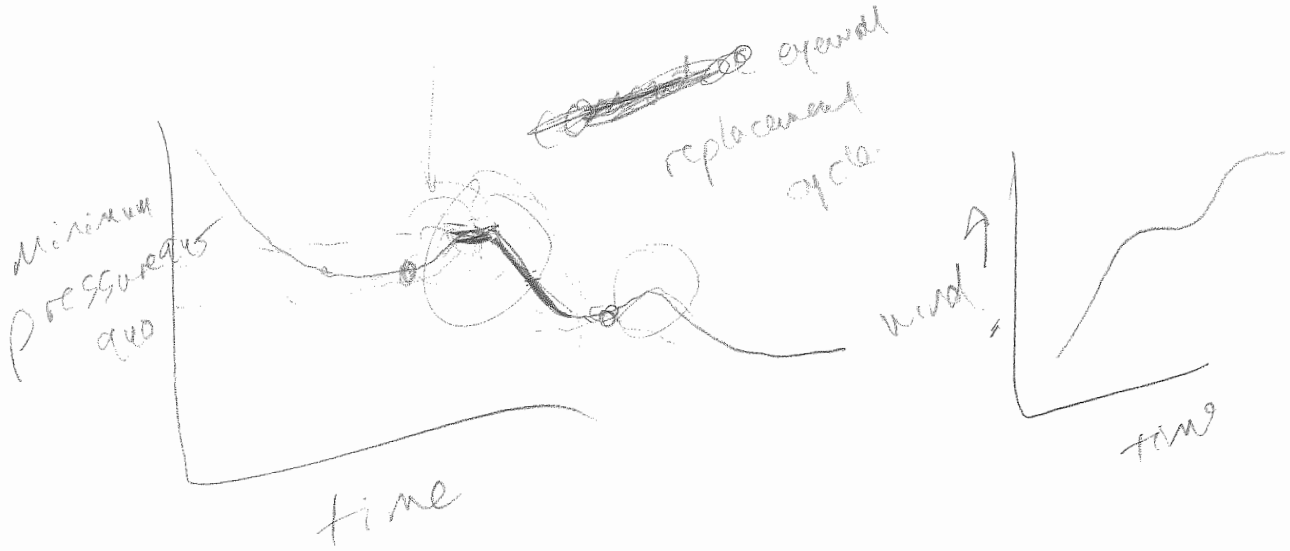




Drop in Eye (Eyewalls/2 per Path)

@ — NHC corridor

X — RAINEX corridor


replacement
cycle
time
time