

19840912HI-LPS

E.1 Lead Project Scientist (On-Board)

The on-board lead project scientist is responsible for carrying out the scientific mission of his assigned aircraft. (Check off and initial when completed.)

E.1.1 Preflight

- ✓ 1. Participate in general mission briefing.
- ✓ 2. Determine specific mission and flight pattern(s) for his aircraft.
- ✓ 3. Determine from CARCAH or field program director whether aircraft has operational fix responsibility and discuss with RFC flight director/meteorologist and CARCAH, unless briefed otherwise by field program director.
- ✓ 4. Contact HRD members of crew to:
  - a. Assure availability for mission.
  - b. Arrange ground transportation schedule when deployed.
  - c. Determine equipment status.
- ✓ 5. Meet with RFC flight crew 90 minutes before takeoff, provide copies of flight plans and give a formal briefing to the flight director, navigator, and pilots.
- ✓ 6. Report status of aircraft, systems and crews to appropriate HRD operations center.

E.1.2 In-Flight

- ✓ 1. Confirm from RFC flight director/meteorologist that satellite data link is operative (information).
- NIGHT FLIGHT 2. Confirm camera mode of operation. ~~EVERY 5 SECS DAYLIGHT~~
- ✓ 3. Confirm data recording rate.
- ✓ 4. Complete form E-1.

### E.1.3 Postflight

- ✓ 1. Debrief crew.
- ✓ 2. Report landing time, aircraft, crew and mission status to HRD operations center.
- ✓ 3. Gather completed forms for mission and turn in at the operations center.
- ✓ 4. Determine next mission status, if any, and brief crews as necessary.
- ✓ 5. Notify operations center as to where you can be contacted.

On-board Lead Project Scientist Checklist

DATE 12 SEPT 1984 AIRCRAFT NOAA 42 FLT 840912H1

A. Participants

Hurricane Diana

| Function        | Participant           | Function   | Participant      |
|-----------------|-----------------------|------------|------------------|
| Lead Proj. Sci. | <u>BURPEE</u>         | Gust Probe | <u>N.A.</u>      |
| Cloud Physics   | <u>N.A.</u>           | Omegasonde | <u>N.A.</u>      |
| AXBT            | <u>N.A.</u>           | Sys Eng    | <u>SCHRICKE</u>  |
| Hot Film        | <u>N.A.</u>           | Data Tech  | <u>GOLDSTEIN</u> |
| Radar           | <u>R. BLACK/DORST</u> | El Tech    | <u>CALVERT</u>   |
| Flt Dir/Met     | <u>DARBY</u>          | Other      |                  |

Take Off 0402Z Location MIAMI Landing 1339Z Location MIAMI

B. Past and Forecast Storm Position

| Date          | Time                          | Latitude      | Longitude     | MSLP       |
|---------------|-------------------------------|---------------|---------------|------------|
| <u>840911</u> | <u><del>0100Z</del> 2115Z</u> | <u>33°40'</u> | <u>77°45'</u> | <u>950</u> |
|               | <u>2255</u>                   | <u>33°42'</u> | <u>77°45'</u> | <u>950</u> |
|               | <u>2355</u>                   | <u>33°50'</u> | <u>77°40'</u> | <u>949</u> |
| <u>840912</u> | <u>0124Z</u>                  | <u>33°59'</u> | <u>77°37'</u> | <u>952</u> |

positions of wind center during the flight are in the event log

C. Mission Briefing

Hurricane Diana is expected to be very near coast to the northeast of Wilmington, North Carolina. Will begin with leg along coast from southwest to northeast through the center if possible. Intend to fly modified rotating 4 in southeastern semicircle of storm. TAS calibration enroute

D. Equipment Status

| Equipment     | Pre Flt | In Flt          | Post Flt | Reports Collected |
|---------------|---------|-----------------|----------|-------------------|
| Aircraft      | ✓       | ✓               | ✓        |                   |
| Radar         | ✓       | ✓               | ✓        | ✓                 |
| Cloud Physics | N.A.    |                 |          |                   |
| Data Sys      | ✓       | ✓               |          |                   |
| Omegasondes   | N.A.    |                 |          |                   |
| AXBT          | N.A.    |                 |          |                   |
| Gust Probe    | N.A.    |                 |          |                   |
| Hot Film      | N.A.    |                 |          |                   |
| Photography   | ✓       | <i>not used</i> |          |                   |
|               |         |                 |          |                   |
|               |         |                 |          |                   |

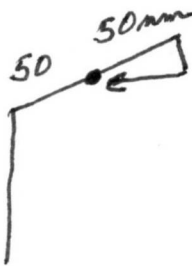
REMARKS

classic double eye on radar beginning about 0815 Z. Diameter of inner eye ~ 15 mm, diameter of outer eye about 40 mm.

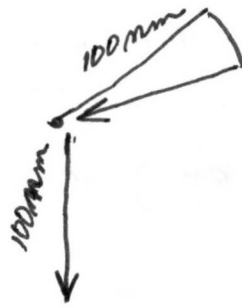
the diameter of the eyes did not appear to change with time, a secondary wind maximum was observed in the outer eye on all radial passes after the concentric eyes initially formed, the relative strength of the secondary wind maximum increased with time ~~so that~~ the wind speeds were 5-10 m s<sup>-1</sup> greater than ~~the diameter~~ the wind speed would have been in the absence of the outer eye on the last radial pass through the eye. Hard copy of wind profiles and one radar presentation were given to Hugh Willoughby

E. Proposed and Actual Flight Patterns

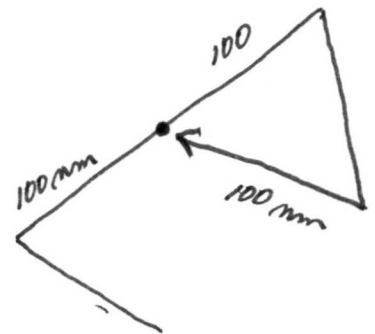
flight patterns were continually adjusted in the air to meet storm location. Preflight anticipated that the storm would be making landfall during the flight. Navigator thought that 100 nm flight legs meant 100 nm from one side of storm to the other. This was the first solo flight of the navigator in a hurricane. I should have explained things better



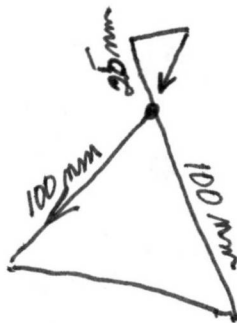
(1)



(2)



(3)



(4)

previous 77°31'  
fix

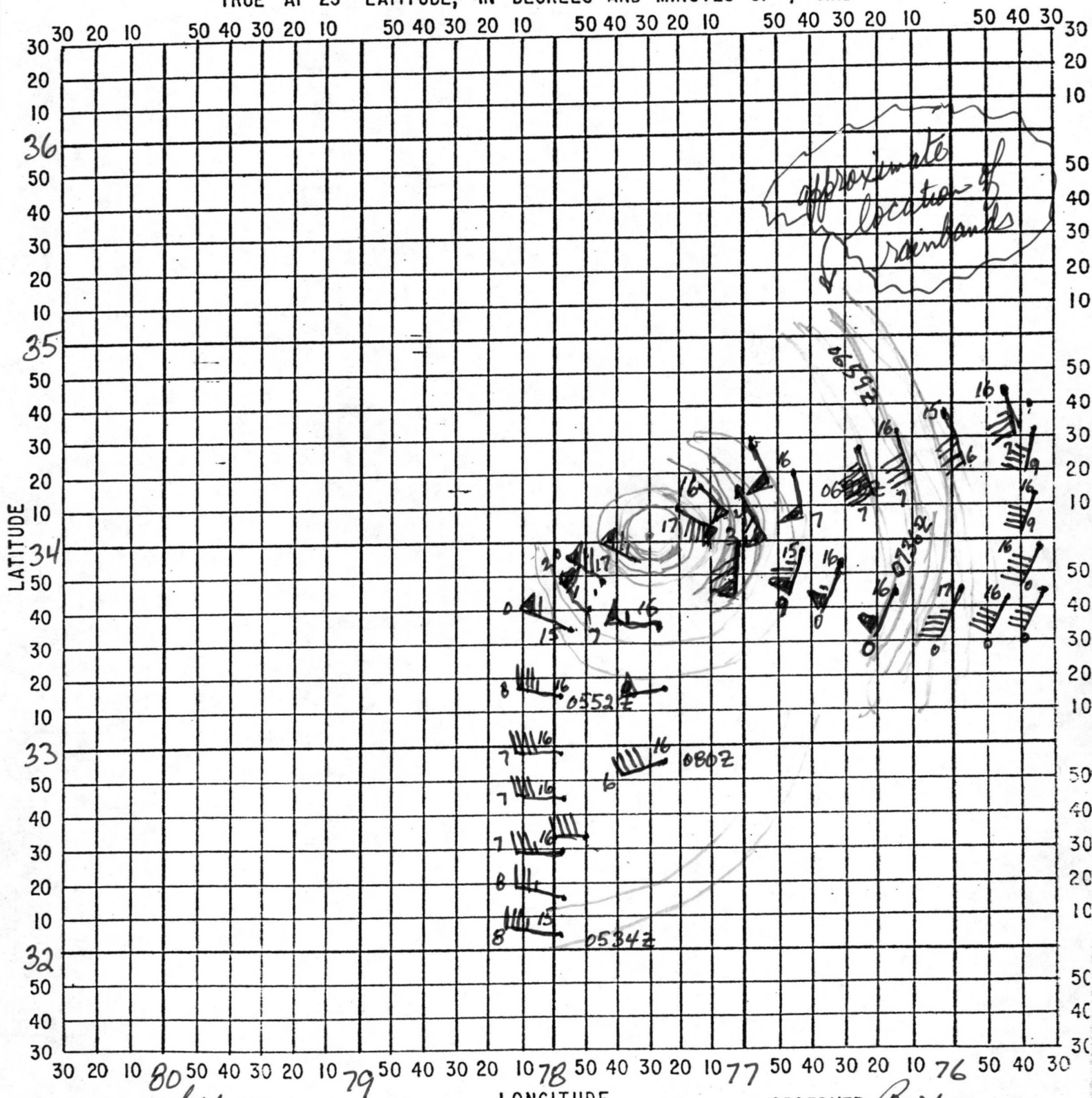
0549 0100

5050 0100

3400

1 of 2

## HURRICANE RECCO PLOTTING CHART

TRUE AT 25° LATITUDE, IN DEGREES AND MINUTES OF  $\phi$  AND  $\lambda$ 

DATE 12 Sept 1984

840912 H1

LONGITUDE

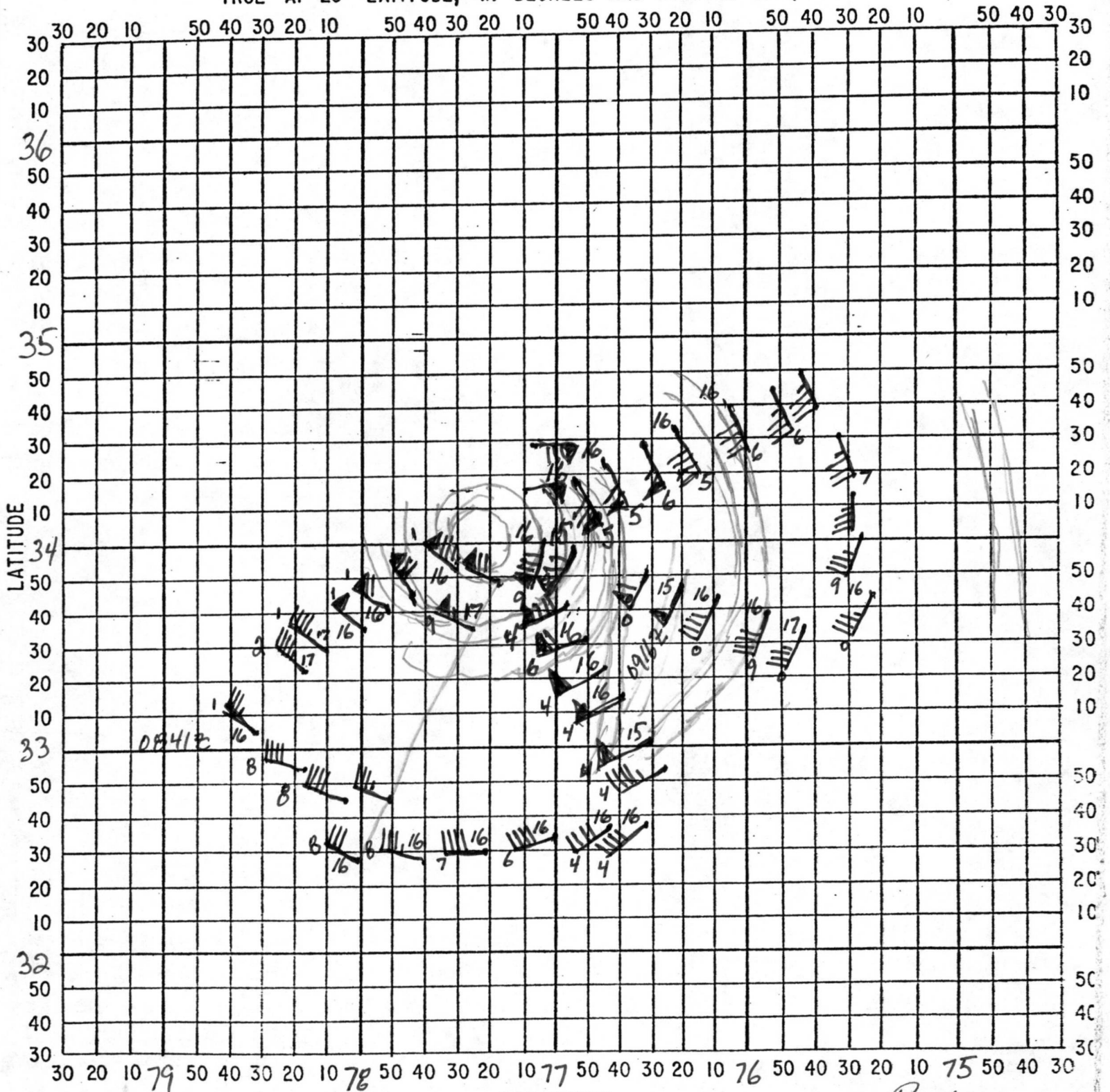
OBSERVER

Burpee

NOTE: Label full degrees according to location of flight area

# HURRICANE RECCO PLOTTING CHART

TRUE AT 25° LATITUDE, IN DEGREES AND MINUTES OF  $\phi$  AND  $\lambda$



DATE 840912H1

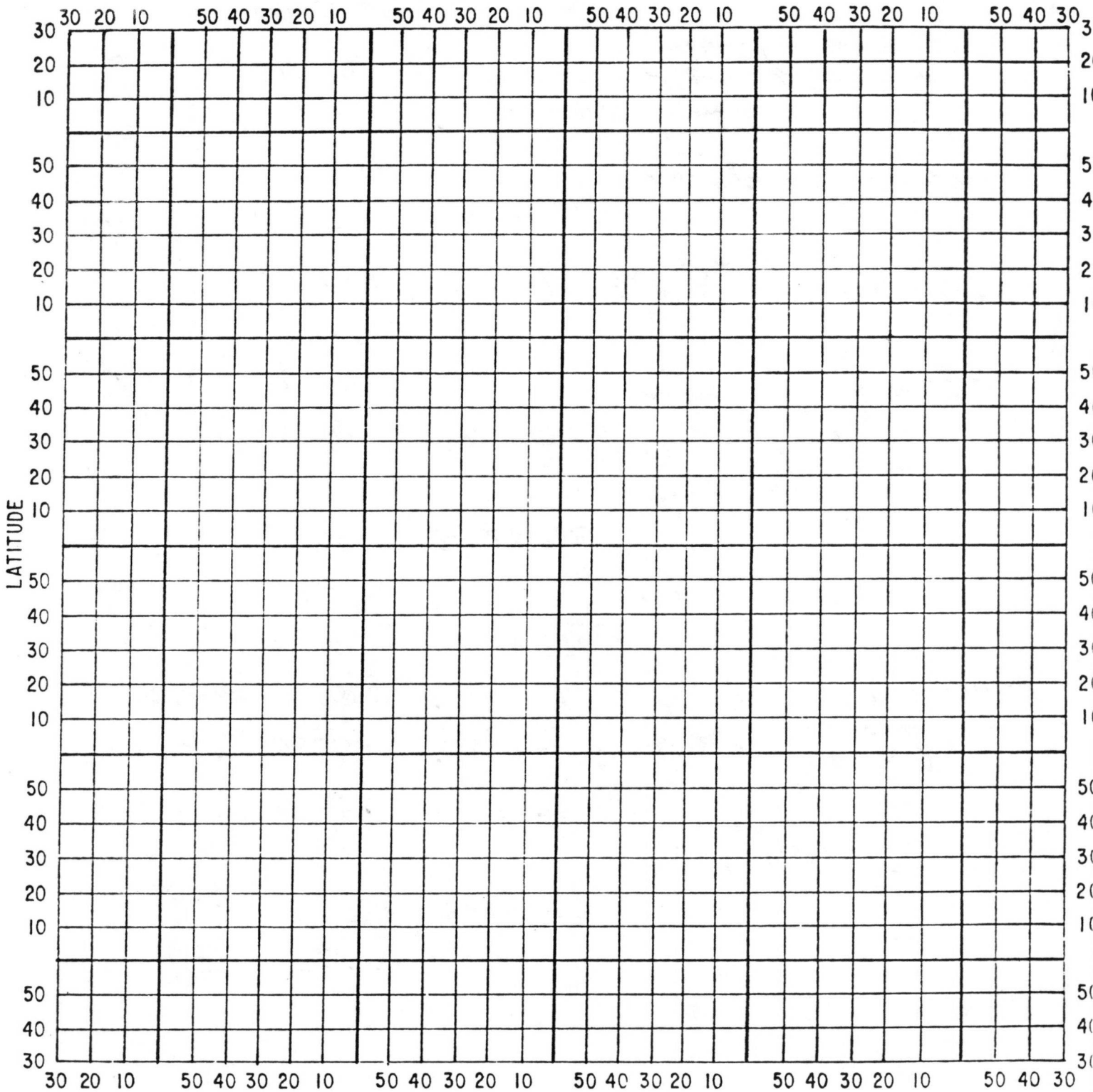
LONGITUDE

OBSERVER Burpee

NOTE: Label full degrees according to location of flight area

# HURRICANE RECCO PLOTTING CHART

TRUE AT 25° LATITUDE, IN DEGREES AND MINUTES OF  $\phi$  AND  $\lambda$



DATE \_\_\_\_\_

LONGITUDE

OBSERVER \_\_\_\_\_

NOTE: Label full degrees according to location of flight area

## HURRICANE RECCO PLOTTING CHART

TRUE AT 25° LATITUDE, IN DEGREES AND MINUTES OF  $\phi$  AND  $\lambda$

30 20 10 50 40 30 20 10 50 40 30 20 10 50 40 30 20 10 50 40 30 20 10 50 40 30

LATITUDE

30 20 10 50 40 30 20 10 50 40 30 20 10 50 40 30 20 10 50 40 30 20 10 50 40 30

DATE \_\_\_\_\_ LONGITUDE \_\_\_\_\_ OBSERVER \_\_\_\_\_

NOTE: Label full degrees according to location of flight area

DATE 12 Sept. 1984

FLIGHT 840912H1

LPS Burpee

Lead Project Scientist Event Log

| EVENT                 | TIME*  | POSITION         | COMMENTS**                                              |
|-----------------------|--------|------------------|---------------------------------------------------------|
| Begin TAS calibration | 052335 |                  |                                                         |
| End TAS calibration   | 053300 | 32.04°N 77.97°W  |                                                         |
| Begin leg             | 0533   |                  | heading north to IP                                     |
| end leg               | 055555 | 33.51°N 77.98°W  |                                                         |
| begin leg             | 055625 | 33.53°N 77.96°W  | heading 035° through storm center and parallel to coast |
| wind center           | 060600 | 34.01°N 77.50°W  | pmin 961mb deye ~ 12mm                                  |
| end leg               | 061510 | 34.48°N 77.00°W  |                                                         |
| begin leg             | 061610 |                  | short leg to southeast                                  |
| end leg               | 062540 | 34.20°N 76.5     |                                                         |
| begin leg             |        |                  | turn back to storm center toward west                   |
| wind center           | 064000 | 34.01°N 77.48°W  | pmin 961 deye ~                                         |
| end leg               |        |                  | heading east-northeast to 100 nm away from center       |
| begin leg             | 064100 |                  |                                                         |
| end leg               | 070700 |                  |                                                         |
| begin leg             | 070800 | 34.76°N, 75.63°W | heading south on east side of storm                     |
| end leg               | 072610 | 33.71°N 75.55°W  |                                                         |
| begin leg             | 072650 |                  | head to center of storm from east                       |
| wind center           | 075    | 34.01°N 77.41°W  | pmin 963 deye ~ 15mm                                    |
| end leg               |        |                  | heading south to 100 nm south of center                 |
| begin leg             | 075230 |                  |                                                         |
| end leg               | 0820   |                  |                                                         |
| begin leg             |        |                  | heading northwest to point 80 nm southwest of storm     |

\*Log times of all significant altitude changes, turns, and eye fixes

\*\*New altitude, heading, center position, etc.

DATE 12 SeptFLIGHT 840912 H1LPS Burpee

## Lead Project Scientist Event Log

| EVENT       | TIME*  | POSITION         | COMMENTS**                                                |
|-------------|--------|------------------|-----------------------------------------------------------|
| end leg     | 084050 | 33.12°N 78.60°W  |                                                           |
| begin leg   | 084155 | 33.17°N 78.57°W  | heading northeast along coast to center                   |
| wind center | 090300 | 33.98°N 77.29°W  | Pmin 964 mb inner eye ~ 15 mm outer eye ~ 40 mm           |
| begin leg   | 090430 | 34.04°N 77.16°W  | heading to 100 nm east of center                          |
| end leg     | ~0930  |                  |                                                           |
| begin leg   | ~0931  |                  | heading north northwest on east side of storm             |
| end leg     | 094830 | 34.85°N 77.66°W  |                                                           |
| begin leg   | 094920 |                  | heading southwest to center of storm                      |
| wind center | 101300 | 34.03°N 77.20°W  | Pmin 966 mb inner eye diam ~ 15 mm outer ~ 40 mm          |
| end leg     | ~1014  |                  | head south southwest to point 100 nm south of center      |
| begin leg   | ~1040  | ~32.41°N 77.93°W |                                                           |
| end leg     | ~1040  |                  | heading to east south of storm                            |
| begin leg   | 104130 |                  |                                                           |
| end leg     | ~1100  |                  |                                                           |
| begin leg   | ~1101  | ~32.84°N 76.40°W | heading northwest to storm center                         |
| wind center | 112320 | 34.06°N 77.12°W  | Pmin 967 mb inner eye diam ~ 15 mm outer eye diam ~ 40 mm |
| end leg     | 112355 |                  | heading north of center                                   |
| begin leg   | ~1132  |                  |                                                           |
| end leg     | ~1132  |                  | heading east                                              |
| begin leg   | ~1137  |                  | do                                                        |
| end leg     | ~1137  |                  |                                                           |
| begin leg   | 113820 | 34.46°N 76.65°W  | heading to <del>the</del> southwest through the center    |

classic double eye on radar

?

\*Log times of all significant altitude changes, turns, and eye fixes

\*\*view altitude, heading, center position, etc.

wind center ~114710 34.07°N 77.10°W Pmin 967 mb

end pattern 115450

SEP 12 1984

SEP 12 1984

Flight # 840912H DIANE

A. C. # 42

Operator BLACK + DORST

Radar Tech. GOLDSTIEN

Number of digital magnetic tapes on board 14

Number of video tapes on board 2

Number of tape labels on board 00

Component systems up and checked:

RDSC ☒

VTR ☒

Computer ☒

DSC1 ☒

DMTR1 ☐

DSC2 ☒

DMTR2 ☐

Scopes ☐

NO ☐

LF ☒

TA ☒

Time correction between radar time and digital time + 1

Radar Postflight Summary

Number of digital tapes used DMTR 1 8

DMTR 2 8

Number of video tapes used 2

Significant recorder down time (other than for tape changes):

DMTR: LF 14 mins

VTR: LF                     

NO                     

NO                     

TA 14 mins

TA                     

Other problems: (stabilization, interference, etc.)

