

SECTION III

SUMMARY OF THE 1959 TYPHOON SEASON

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A. NUMBER OF TYPHOONS

In 1959 a total of 65 tropical disturbances occurred over the Pacific Ocean west of 140 degrees west and north of the Equator (See page 11 entitled "Tropical Cyclones of 1959"). Of these, 59 were assigned cyclone numbers and 33 were named. Tropical disturbances existed on 177 different calendar days, which is higher than the past 50-year average of 147 days. The maximum period between successive disturbances was 48 days. This period occurred from 11 May to 28 June. However, August had 26 days and September 30 days with tropical disturbances. This is consistent with historically observed peaks of tropical cyclone activity.

Of the 65 tropical disturbances, 17 became typhoons, which is less than the normal yearly average of 19. The typhoons, in order of occurrence, were: TILDA, BILLIE, ELLEN, GEORGIA, IRIS, JOAN, LOUISE, PATSY, SARAH, VERA, AMY, CHARLOTTE, DINAH, EMMA, FRED, GILDA and HARRIET. In addition, 9 other tropical disturbances, namely RUEY, SALLY, WILDA, CLARA, KATE, NORA, OPAL, WANDA and BABS, never exceeded tropical storm intensity. There was also one hurricane, Hurricane DOT, which occurred over the Central Pacific in August.

For a composite chart showing the tracks of all typhoons of the 1959 season, refer to page 13. Typhoon tracks for each month having one or more typhoons are included on pages 14 through 20.

B. AREA OF FORMATION AND DEVELOPMENT

As in the past, the tropical disturbances of 1959 were observed

to form within the normal typhoon spawning grounds of the tropical and subtropical western North Pacific. These disturbances were noted to have developed from vortices which, in general, were associated originally with easterly waves or the Intertropical Convergence Zone. Exceptions to this were ELLEN and GEORGIA which were formed as a result of the fracturing of polar troughs which extended to tropical latitudes.

Five of the 17 typhoons were first detected within 300 miles of Guam. They were, in order of occurrence, typhoons ELLEN, JOAN, LOUISE, SARAH and VERA. One disturbance, Typhoon PATSY, formed in the vicinity of 180 degrees longitude and spent her entire life oscillating northward about this meridian. Three of the typhoons LOUISE, SARAH and EMMA, were noted to have reached typhoon intensity at an abnormally slow rate, while another three, GEORGIA, IRIS and FRED A, developed to full typhoon intensity in a matter of hours.

C. SIZE AND INTENSITY OF TYPHOONS

Typhoons of the 1959 season were observed to be generally widespread in extent as compared with those of previous years. Only four typhoons, BILLIE, IRIS, PATSY and AMY, were noted to be of small areal extent, while typhoons JOAN, SARAH and VERA developed to very large dimensions and individually became the dominant feature of the Western Pacific circulation. It was the latter three which caused the greatest destruction and damage. For details of the damage caused, see SECTION VI, "Destructive Effects of Typhoons."

The two largest and most intense typhoons of 1959 were JOAN and VERA. Winds estimated by reconnaissance aircraft observers were 200

knots in JOAN and 175 knots in VERA. Both had sea level pressures below 900 millibars; JOAN's minimum central pressure was 891 millibars and VERA went as low as 896 millibars. For a comparison of the various significant parameters associated with each typhoon of 1959 see page 21, entitled "Typhoon Summation Data Sheet."

D. MOVEMENT OF TYPHOONS

Weather reconnaissance aircraft fixes supplemented by auxiliary charts and detailed map analyses provided sufficient information for determining, with reasonable accuracy, the tracks of the typhoons.

During their incipient stages the storms were observed to generally move in a westerly to west-northwesterly direction at average speeds of 8 to 12 knots. Three of the more important exceptions were typhoons ELLEN, GEORGIA and PATSY. All three originated north of 17 degrees and moved in a more northerly direction than the rest.

Thirteen of the typhoons recurved into the higher latitudes and subsequently became extra-tropical systems. Three late-season typhoons, CHARLOTTE, EMMA and FREDa, recurved fairly sharply, while the remainder recurved more gradually. Two typhoons, GILDA and HARRIET, showed little evidence of recurvature, and HARRIET actually moved south of west while passing through the central Philippine Islands. IRIS and JOAN showed evidence of recurvature but both dissipated after entering the China Coast.

Of those typhoons which recurved, eight showed a definite deceleration before recurvature and acceleration after recurvature, while typhoons, VERA, AMY and FREDa showed no noticeable deceleration prior to recurvature.

TROPICAL CYCLONES OF 1959

CYCLONE	PERIOD
01. Investigation	24 Feb
02. Tropical Storm RUBY (3)	27 Feb - 01 Mar
03. Tropical Storm SALLY (10)	04 Mar - 13 Mar
04. Typhoon TILDA	14 Apr - 23 Apr
05. Investigation	01 May
06. Investigation	11 May
* Tropical Depression VIOLET (2)	28 Jun - 29 Jun
* Tropical Storm WILDA (3)	04 Jul - 06 Jul
07. Tropical Depression ANITA (3)	05 Jul - 07 Jul
08. Typhoon BILLIE	09 Jul - 18 Jul
** Tropical Storm CLARA (7)	16 Jul - 22 Jul
09. Investigation	17 Jul
10. Investigation	20 Jul
11. Investigation	25 Jul
** Hurricane DOT	01 Aug - 08 Aug
12. Typhoon ELLEN	31 Jul - 09 Aug
13. Tropical Depression FRAN (2)	11 Aug - 12 Aug
14. Typhoon GEORGIA	12 Aug - 14 Aug
15. Tropical Depression HOPE (3)	17 Aug - 19 Aug
16. Investigation	17 Aug
17. Investigation	19 Aug - 20 Aug
18. Typhoon IRIS	20 Aug - 23 Aug
19. Investigation	20 Aug
20. Tropical Storm KATE (4)	24 Aug - 27 Aug
21. Typhoon JOAN	25 Aug - 30 Aug
22. Typhoon LOUISE	29 Aug - 07 Sep
23. Investigation	31 Aug - 01 Sep
24. Investigation	Cancelled
* Tropical Depression MARGE (2) ✓	02 Sep - 03 Sep
25. Investigation	04 Sep
26. Tropical Storm NORA (3)	05 Sep - 12 Sep
27. Tropical Storm OPAL (2)	05 Sep - 06 Sep
28. Investigation	06 Sep
29. Typhoon PATSY	06 Sep - 10 Sep
30. Investigation	07 Sep

TROPICAL CYCLONES IN 1959 - CONTINUED

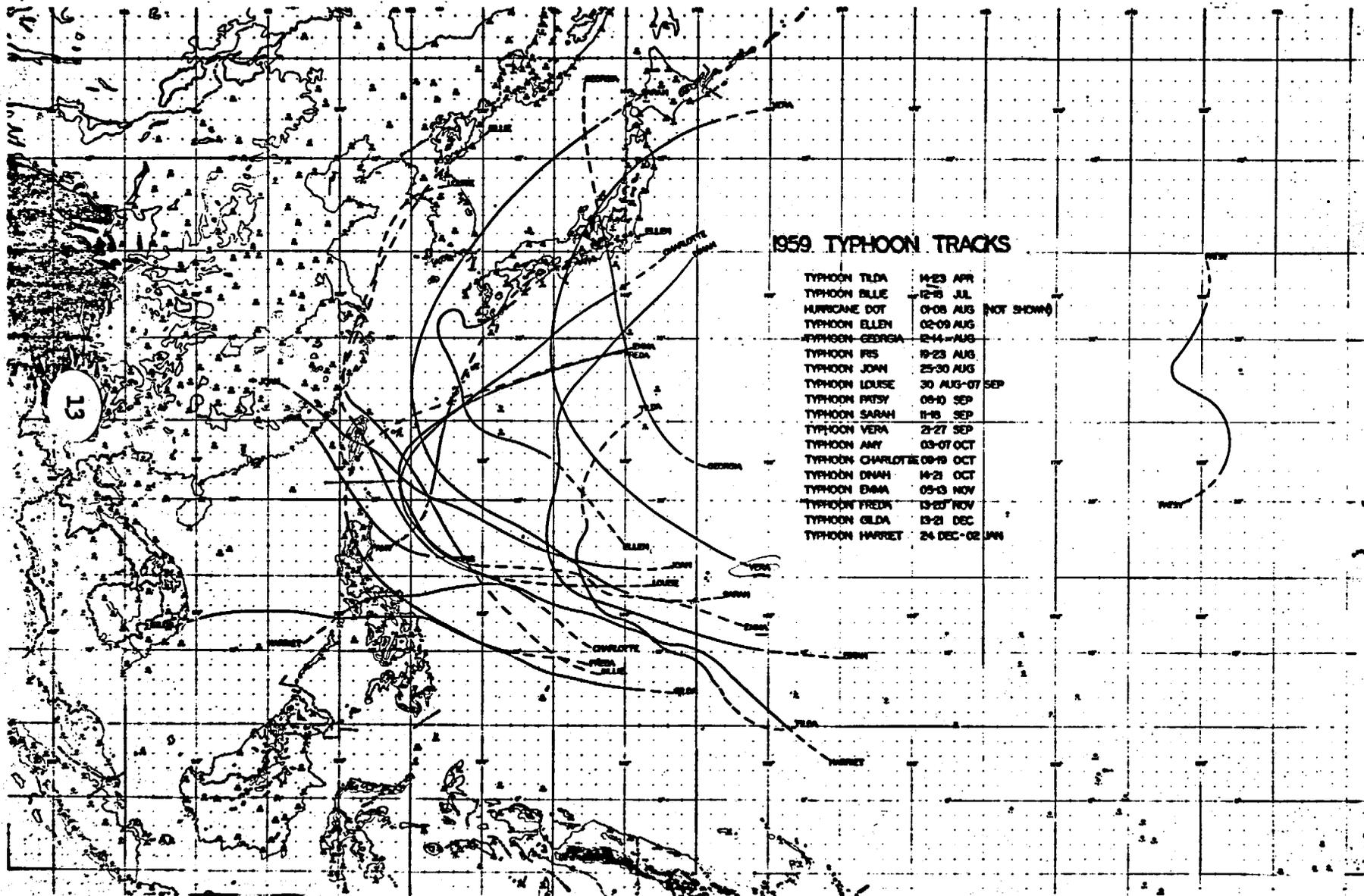
CYCLONE	PERIOD
31. Tropical Depression RUTH (3)	08 Sep - 10 Sep
32. Investigation	10 Sep
33. Typhoon SARAH	10 Sep - 18 Sep
34. Investigation	14 Sep
35. Investigation	14 Sep
36. Tropical Depression THELMA (2)	18 Sep - 19 Sep
37. Investigation	19 Sep
38. Investigation	20 Sep
39. Typhoon VERA	21 Sep - 27 Sep
** Tropical Storm WANDA (2)	26 Sep - 27 Sep
40. Typhoon AMY	27 Sep - 07 Oct
41. Tropical Storm BABS (4)	05 Oct - 10 Oct
42. Typhoon CHARLOTTE	08 Oct - 19 Oct
43. Typhoon DINAH	15 Oct - 21 Oct
44. Investigation	23 Oct - 25 Oct
45. Investigation	26 Oct
46. Typhoon EMMA	01 Nov - 13 Nov
47. Investigation	01 Nov
48. Typhoon FREDA	13 Nov - 20 Nov
49. Investigation	14 Nov - 15 Nov
50. Investigation	19 Nov
51. Investigation	23 Nov - 25 Nov
52. Investigation	27 Nov - 28 Nov
53. Investigation	30 Nov
54. Investigation	05 Dec
55. Investigation	08 Dec
56. Typhoon GILDA	11 Dec - 21 Dec
57. Investigation	18 Dec
58. Typhoon HARRIET	21 Dec - 02 Jan
59. Investigation	22 Dec

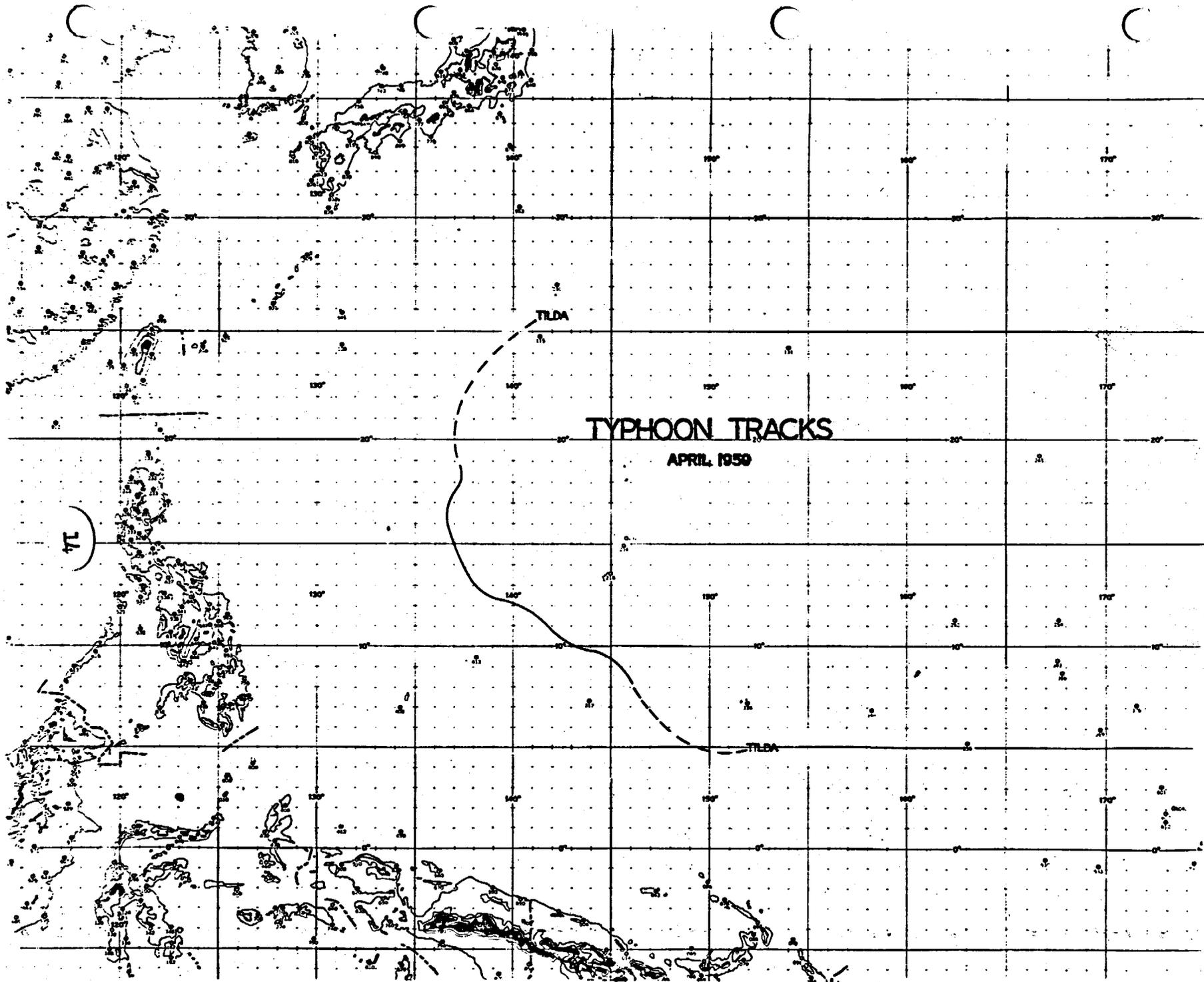
* No reconnaissance performed, therefore no cyclone number assigned.

** Forecast responsibility FWC Pearl and USWB Honolulu; no cyclone number assigned.

1959 TYPHOON TRACKS

TYPHOON TILDA	14-23 APR
TYPHOON BILLIE	12-16 JUL
HURRICANE DOT	01-08 AUG (NOT SHOWN)
TYPHOON ELLEN	02-09 AUG
TYPHOON GEORGIA	12-14 AUG
TYPHOON IRIS	19-23 AUG
TYPHOON JOAN	25-30 AUG
TYPHOON LOUISE	30 AUG-07 SEP
TYPHOON PATSY	08-10 SEP
TYPHOON SARAH	11-15 SEP
TYPHOON VERA	21-27 SEP
TYPHOON AMY	03-07 OCT
TYPHOON CHARLOTTE	08-19 OCT
TYPHOON DIANAH	14-21 OCT
TYPHOON DIANA	05-13 NOV
TYPHOON FREDA	13-20 NOV
TYPHOON GILDA	13-21 DEC
TYPHOON HARRIET	24 DEC-02 JAN





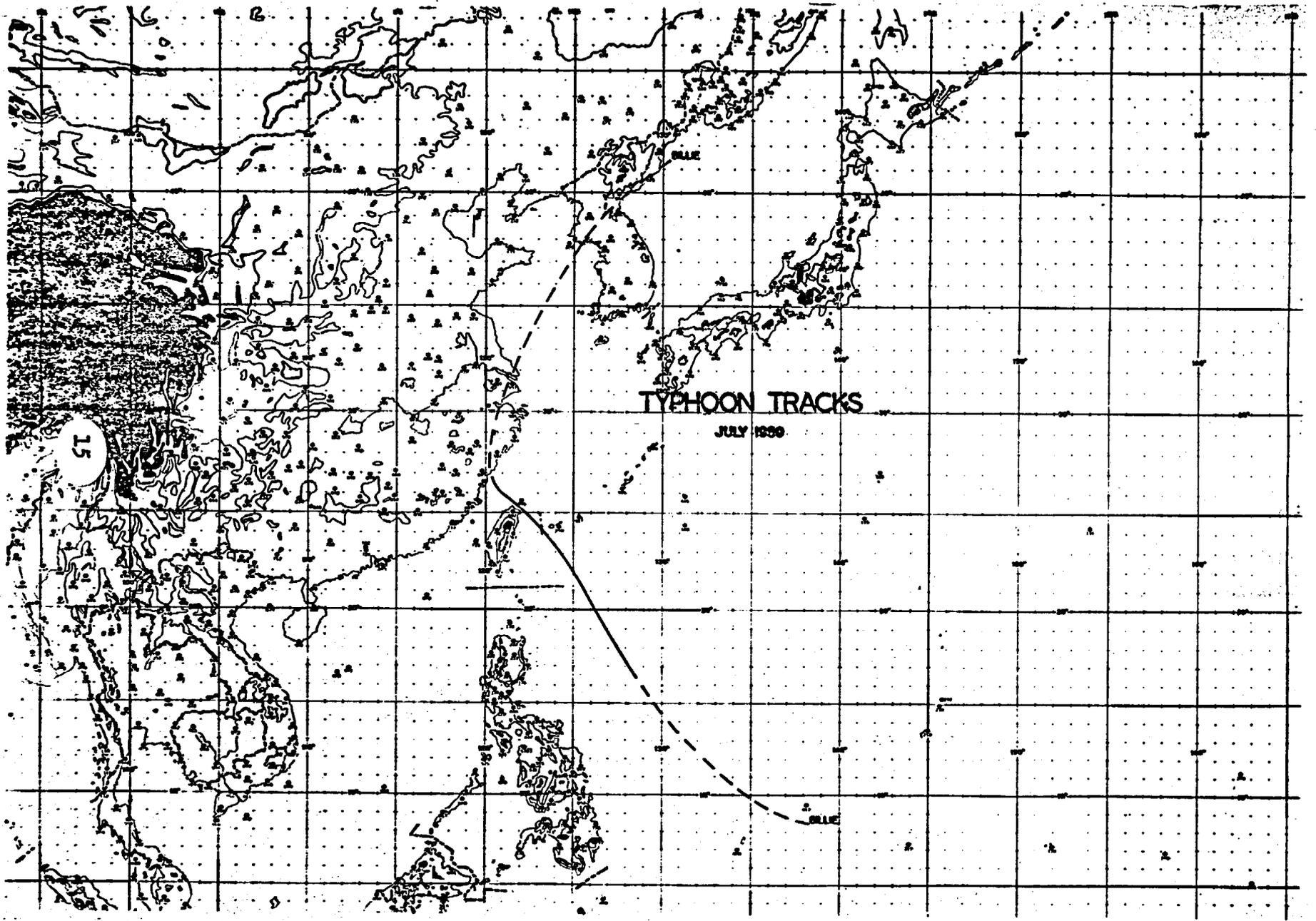
TYPHOON TRACKS

APRIL 1950

TLDA

TLDA

71

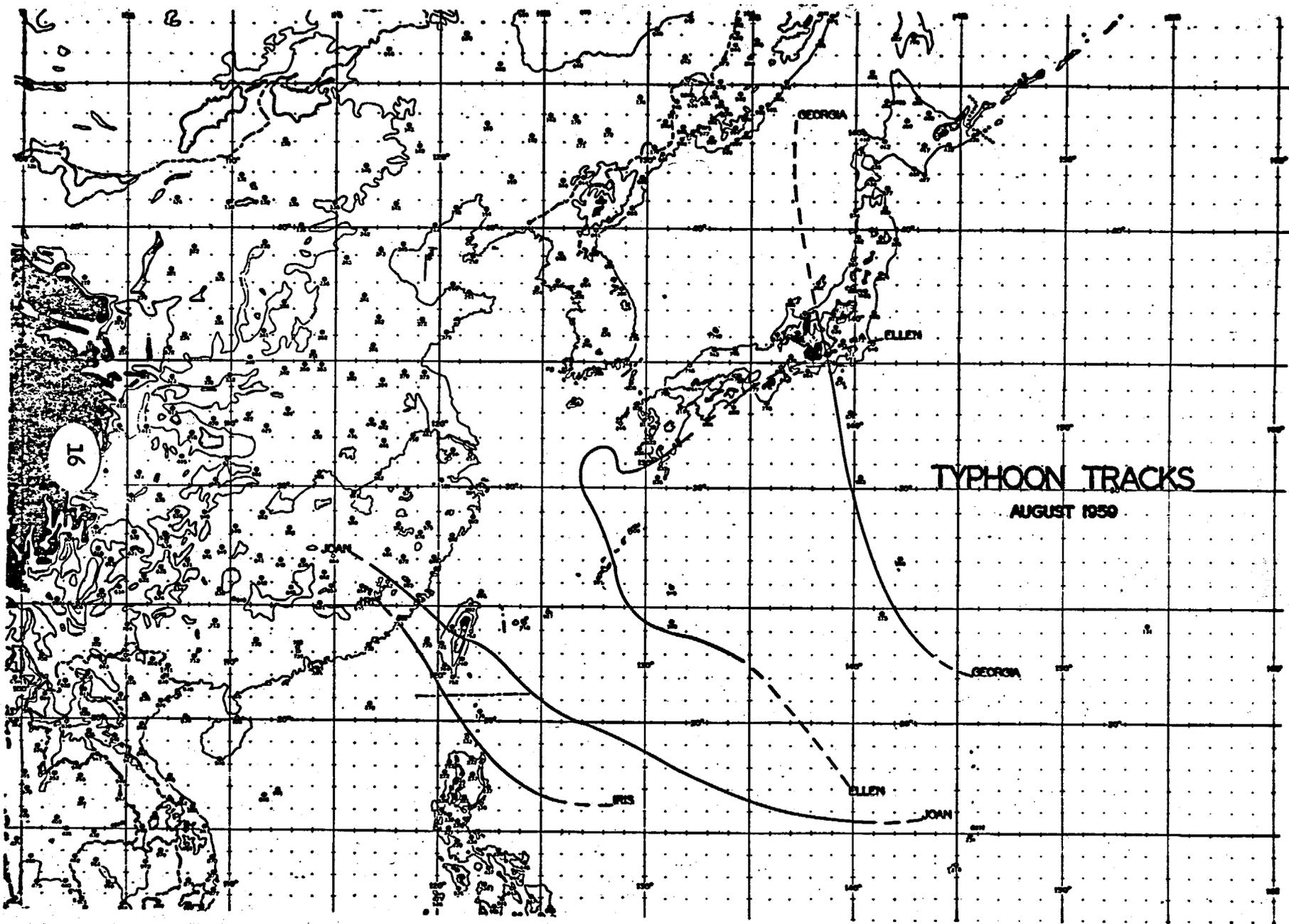


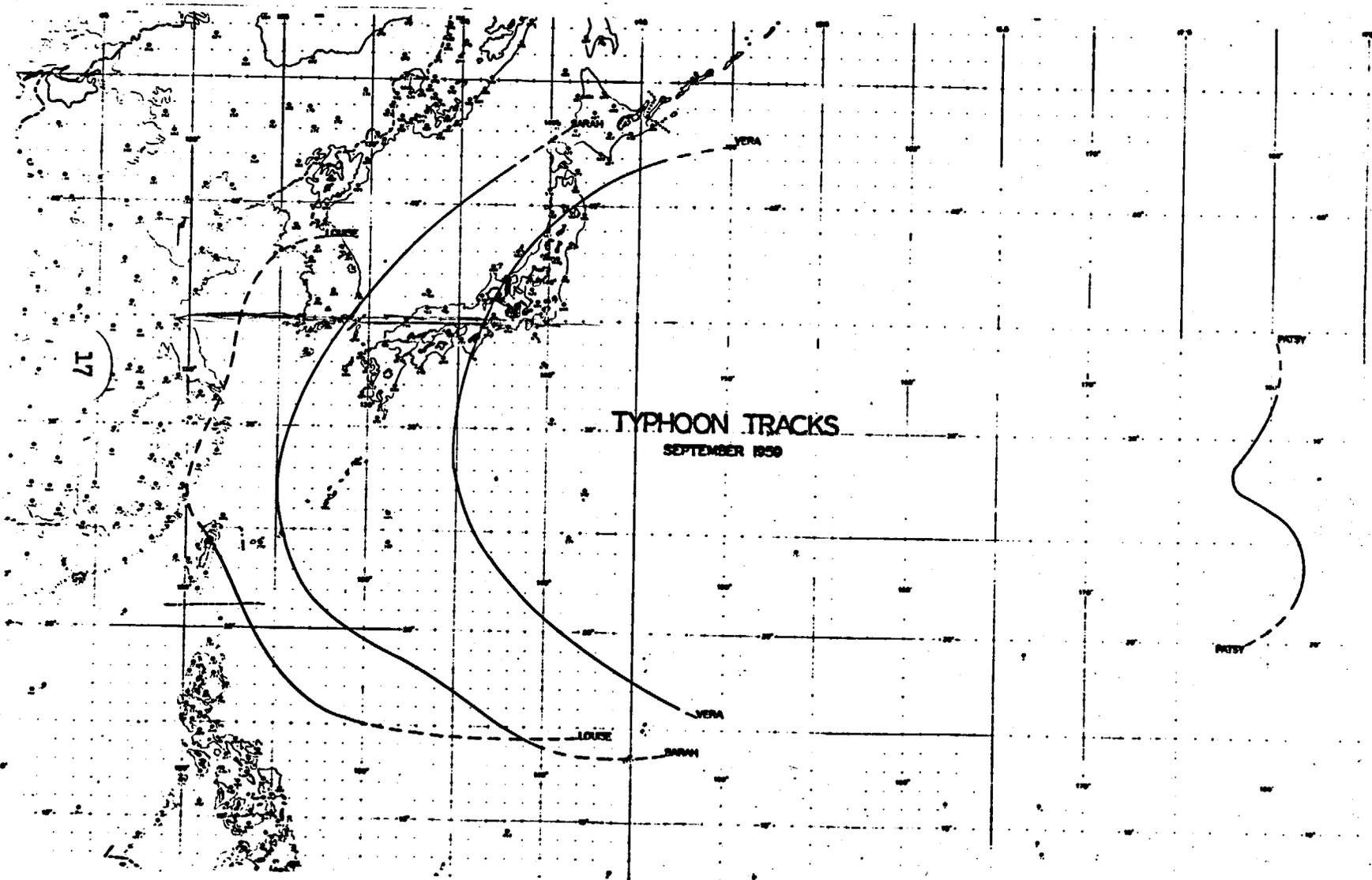
TYPHOON TRACKS
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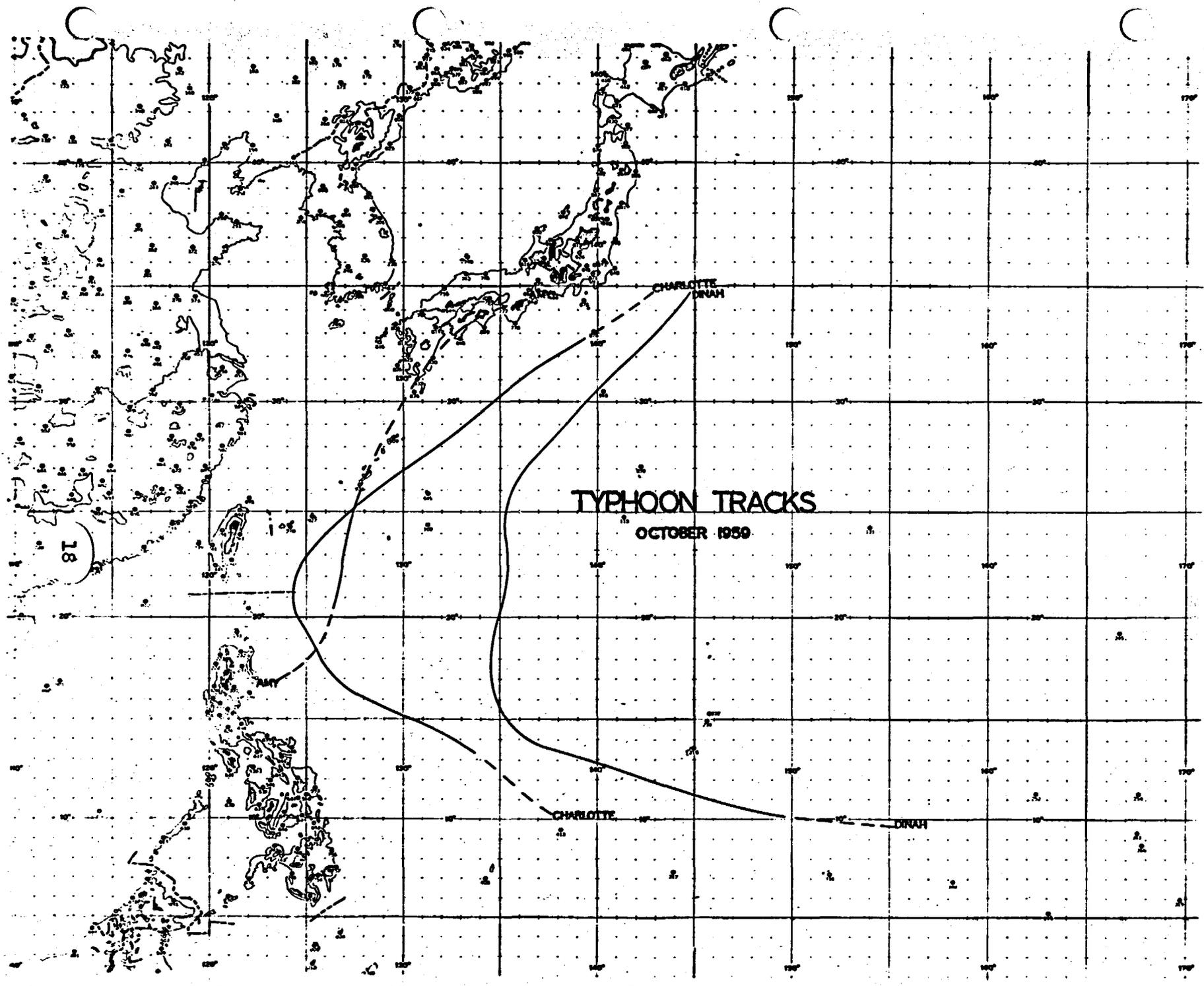
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BLAKE

BLAKE







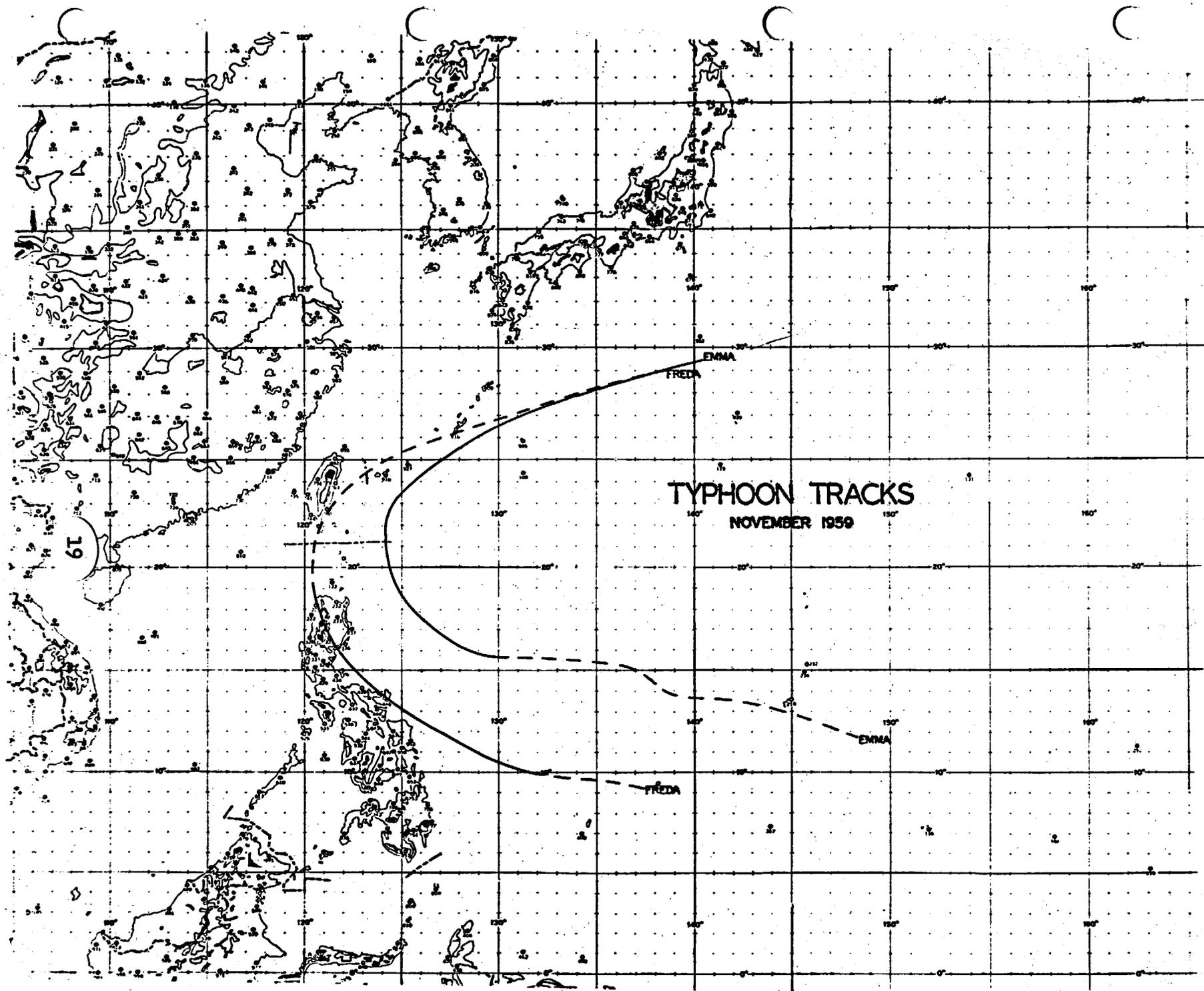
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OCTOBER 1959

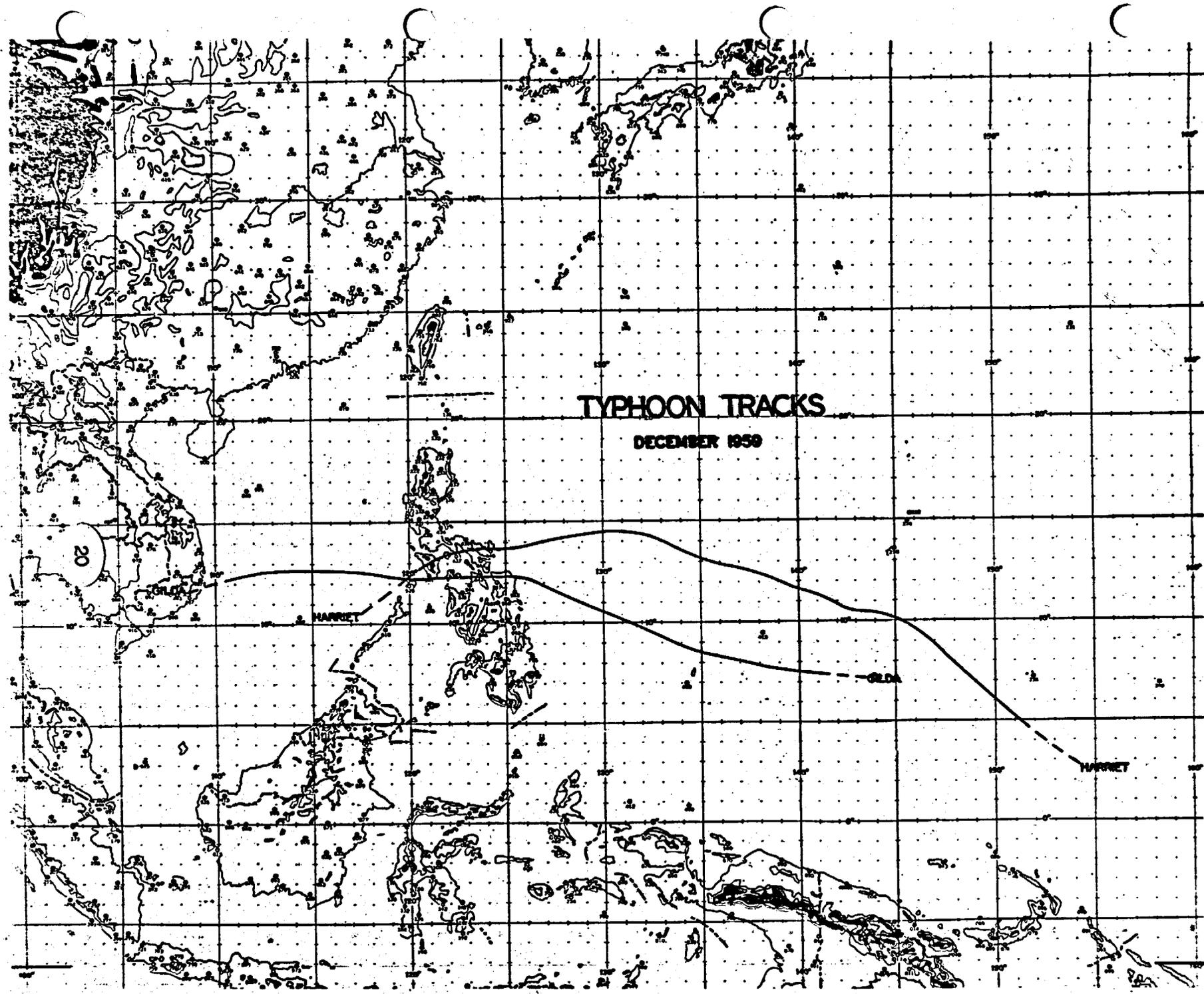
18

CHARLOTTE
DINAH

CHARLOTTE

DINAH





TYPHOON TRACKS

DECEMBER 1959

20

HARRIET

OLDA

HARRIET

TYPHOON SUMMATION DATA SHEET

TYPHOON	FROM RECON	FROM WARNING BULLETIN			FROM RECON			
	MAX OBSVD SFC WND	MAX SFC WND	MAX RADIUS LOOKT WND	MAX RADIUS 50KT WND	MAX TEMP (C)	MAX DP (C)	MIN 700MB HGT	MIN SLP (MBS)
TILDA	175 (70)	130	—	150	23	23	8080	964
HILLIE	100 (75)	80	—	100	27	21	9270	968
ELLEN	110 (78)	100	—	150	20	16	9120	964
GEORGIA	120 (88)	120	20	175	20	17	8960	953
IRIS	100 (77)	90	—	100	19	11	9130	966
JOAN	200 (142)	170	90	300	25	16	6850	891
LOUISE	125 (78)	125	60	225	24	24	9120	964
PATSY	150 (82)	120	—	60	22	15	9250	960
SARAH	170 (130)	165	75	225	26	15	7510	905
VERA	175 (137)	165	75	250	30	23	7180	896
AMY	95 (65)	65	—	60	18	16	9670	977
CHARLOTTE	175 (130)	145	75	180	22	18	7320	905
DINAH	200 (122)	155	50	175	21	17	7600	913
EMMA	130 (83)	110	75	250	25	18	8980	959
FREDA	125 (102)	120	75	180	20	13	8530	936
GILDA	165 (122)	150	50	125	22	18	7540	914
HARRIET	150 (111)	130	50	150	21	19	8140	926