D. TYPHOON ELLEN (2-9 AUGUST 1959)

On 1 August, a well-developed low pressure cell, accompanied by a strong easterly wave, was evident to the northwest of Guam. A reconnaissance aircraft was directed into the area, and at 020535Z a definite eye with surface winds of 25 knots was found. Thus at 020600Z JTWC issued the first warning on Tropical Depression ELLEN. Six hours later ELLEN had reached tropical storm intensity and twenty-four hours later ELLEN was upgraded to a typhoon with center winds of 65 knots.

ELLEN proceeded to move in a northwesterly direction at an average speed of 12 knots, reaching her peak intensity approximately 200 miles south-southeast of Okinawa with center winds of 100 knots and a sea level pressure of 970 mbs. At 050200Z ELLEN passed abeam of Okinawa at a distance of 10 miles to the east-northeast. The highest wind recorded on the island was at Naha where sustained winds of 35 knots with gusts to 50 knots were observed. ELLEN then veered to a more northerly course and decelerated, finally stagnating off the southwest coast of Kyushu. She remained in this location for approximately 48 hours, blocked from further movement by a strong upper air ridge to the north. During this time ELLEN weakened considerably, and was downgraded to a tropical storm at 080600Z. By 071200Z it was evident that the ridge aloft had weakened to a marked degree, and ELLEN began to accelerate toward the east-northeast. She moved along the southern coast of Japan passing directly over Tokyo, and reached the open sea east of Honshu at 091100Z. ELLEN was now an extra-tropical storm moving in excess of twenty knots.

Typhoon ELLEN was characterized by an erratic path which is typical of early August typhoon climatology. Typhoon MARGE of 1951 had a similar path except that the unusual blocking southwest of Japan did not occur. The diameter of Typhoon ELLEN's eye was very large, averaging 50 miles, and several times reconnaissance aircraft reported the eye as having a diameter of 100 miles. Twenty-five warnings covering a period of 7 days were issued.

For damage caused by Typhoon ELLEN see section VI, "Destructive Effects of Typhoons."

RECONNAISSANCE AIRCRAFT FIXES - TYPHOON ELLEN

FIX NO.	TIME	LAT.	LONG.	*UNIT METHOD & ACCY	MIN SLP MBS	MAX SFC WND	MIN 700MB HGT	MAX FLT LVL WND	700MB TEMP (°C)	700MB DEWPT (°C)	EYE CHARACTERISTICS
1	010345Z	18.1N	139.4E	54-P-5	991	35	10090	30	10	09	NO EYE
2	020535Z	18.9N	138.1E	54-P-5	995	25	9980	25	08	07	CIRC DIA 50 MI
3	020820Z	18.9N	137.8E	54-T-10	- -	- -	- -	- -	- -	- -	————————
4	022030Z	22.0N	135.7E	54-P-5	998	- -	9900	48	11	06	CIRC DIA 40 MI
5	030215Z	22.8N	135.0E	54-P-5	993	50	9840	35	10	09	EYE DIFFUSE
6	030505Z	22.5N	135.2E	54-P-5	987	75	9760	45	16	08	EYE INDEFINITE
7	031144Z	23.6N	133.9E	12-R-20	- -	- -	- -	- -	- -	- -	HORSESHOE SHAPE
8	031702Z	23.6N	132.6E	12-R-5	- -	- -	- -	- -	- -	- -	HORSESHOE 30X20 MI
9	032030Z	24.0N	131.4E	54-P-2	979	60	9560	- -	16	14	CIRC OPEN NORTH
10	032300Z	23.6N	131.4E	12-R-0	- -	- -	- -	- -	- -	- -	HORSESHOE 55X25 MI
11	040200Z	24.2N	130.7E	54-P-0	975	110	9520	40	17	15	CIRC DIA 25 MI
12	040352Z	24.0N	130.3E	56-P-5	970	65	- -	- -	- -	- -	EYE INDEFINITE
13	041049Z	25.1N	129.6E	12-R-3	- -	- -	- -	- -	- -	- -	HORSESHOE 60X30 MI
14	041115Z	24.0N	129.9E	54-R-20	- -	- -	- -	- -	- -	- -	————————
15	041400Z	25.0N	129.5E	54-R-20	- -	- -	- -	- -	- -	- -	CIRC DIA 60 MI
16	042030Z	25.7N	128.2E	54-P-2	- -	- -	9570	60	17	11	CIRC DIA 40 MI
17	050138Z	26.7N	128.6E	56-P-3	971	60	9461	- -	- -	- -	ELLIP 30X25 MI
18	050200Z	26.5N	128.9E	54-P-2	973	50	9460	45	17	16	CIRC DIA 30 MI
19	050800Z	28.3N	128.3E	54-P-0	971	100	9390	60	16	12	CIRC DIA 60 MI
20	051115Z	27.7N	128.7E	12-R-2	- -	- -	- -	- -	- -	- -	HORSESHOE SHAPE

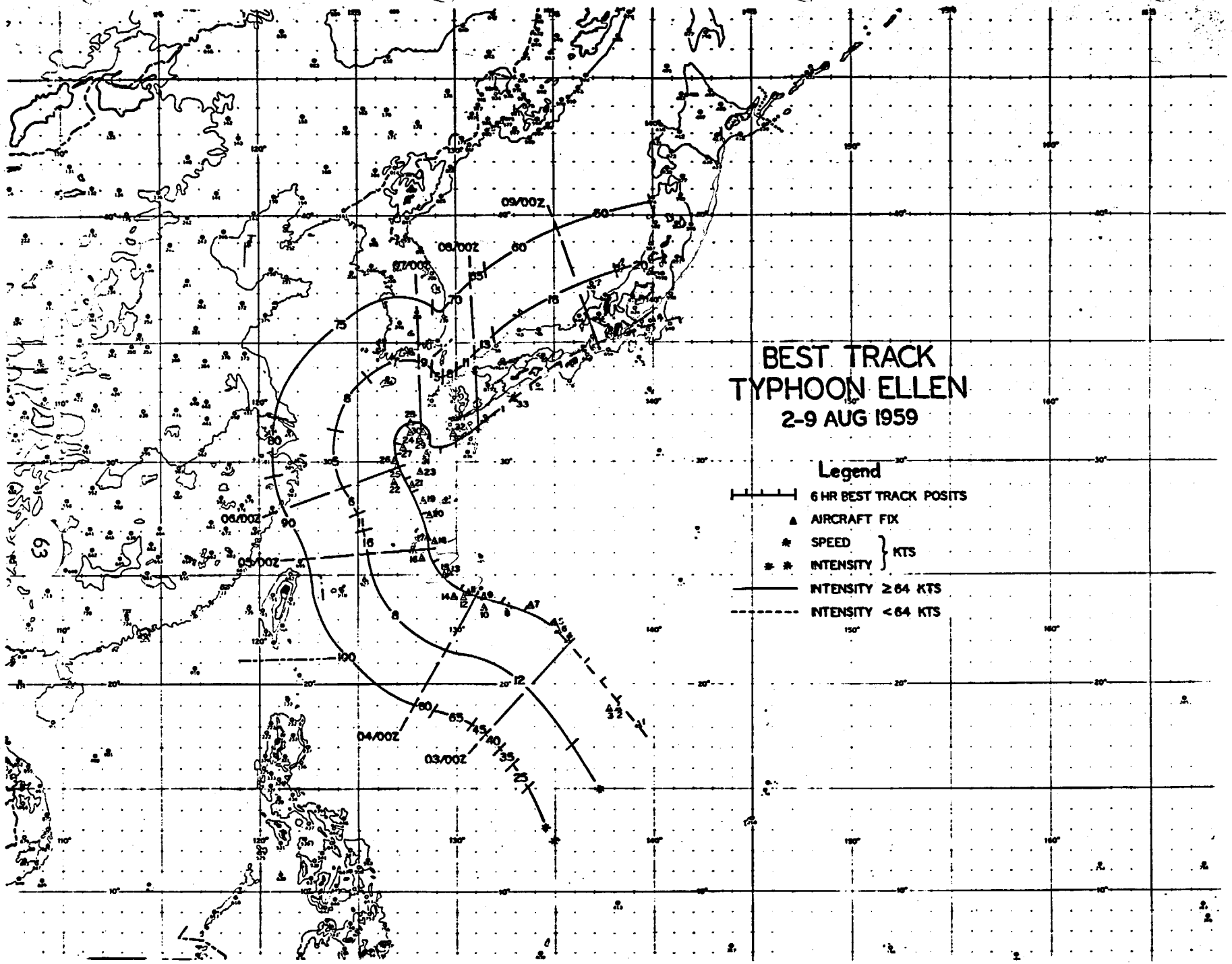
RECONNAISSANCE AIRCRAFT FIXES - TYPHOON ELLEN (CONT'D)

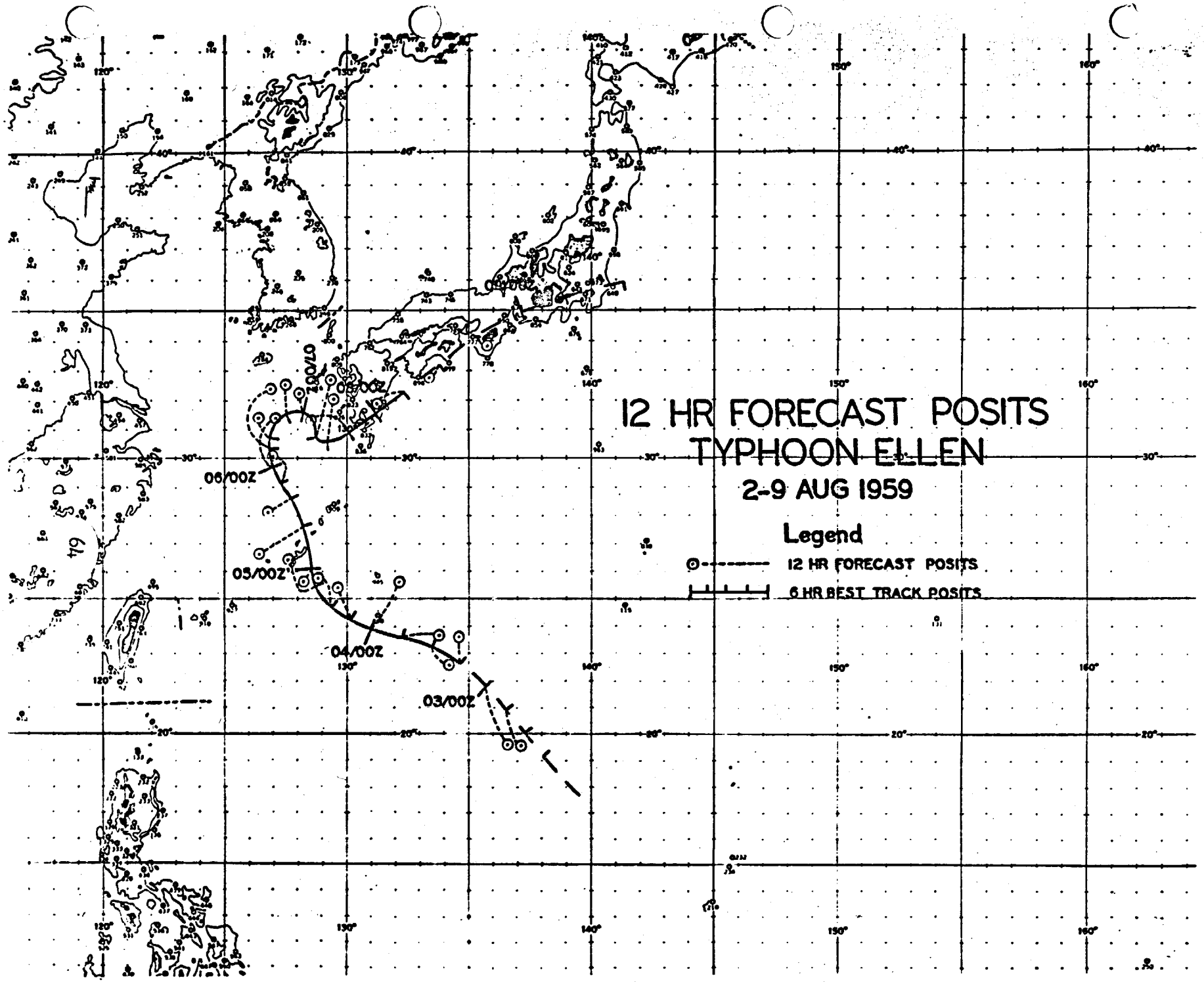
FIX NO.	TIME	LAT.	LONG.	*UNIT METHOD & ACCY	MIN SLP MBS	MAX SFC WND	MIN 700MB HGT	MAX FLT LVL WND	700MB TEMP (°C)	700MB DEWPT (°C)	EYE CHARACTERISTICS
21	051300Z	29.0N	127.8E	54-T-20	- -	- -	- -	- -	- -	- -	----------
22	052130Z	29.1N	126.9E	54-P-10	974	75	9270	90	20	13	CIRC DIA 75 MI
23	052220Z	29.6N	128.2E	12-R-0	- -	- -	- -	- -	- -	- -	ELLIP 100X60 MI
24	060103Z	31.3N	127.7E	56-P-5	- -	- -	- -	- -	- -	- -	CIRC DIA 30 MI
25	060200Z	29.9N	127.0E	56-P-7	965	- -	- -	- -	- -	- -	CIRC DIA 60 MI
26	060845Z	30.0N	126.9E	54-P-5	967	70	9260	- -	19	13	CIRC DIA 30 MI
27	061400Z	30.6N	127.4E	54-T-15	- -	- -	- -	65	- -	- -	----------
28	062200Z	31.7N	127.7E	54-P-6	964	80	9200	60	16	12	CIRC DIA 60 MI
29	062259Z	31.0N	128.1E	12-R-5	- -	- -	- -	- -	- -	- -	CIRC DIA 100 MI
30	070200Z	31.3N	128.4E	54-P-5	964	80	9140	65	18	15	CIRC DIA 100 MI
31	070700Z	30.4N	128.5E	54-P-6	966	60	9120	75	17	15	CIRC DIA 100 MI
32	072000Z	31.2N	129.9E	54-R-2	- -	- -	- -	65	- -	- -	CIRC DIA 05 MI
33	080940Z	32.8N	133.0E	54-P-0	978	55	9330	50	16	14	EYE VERY DIFFUSE

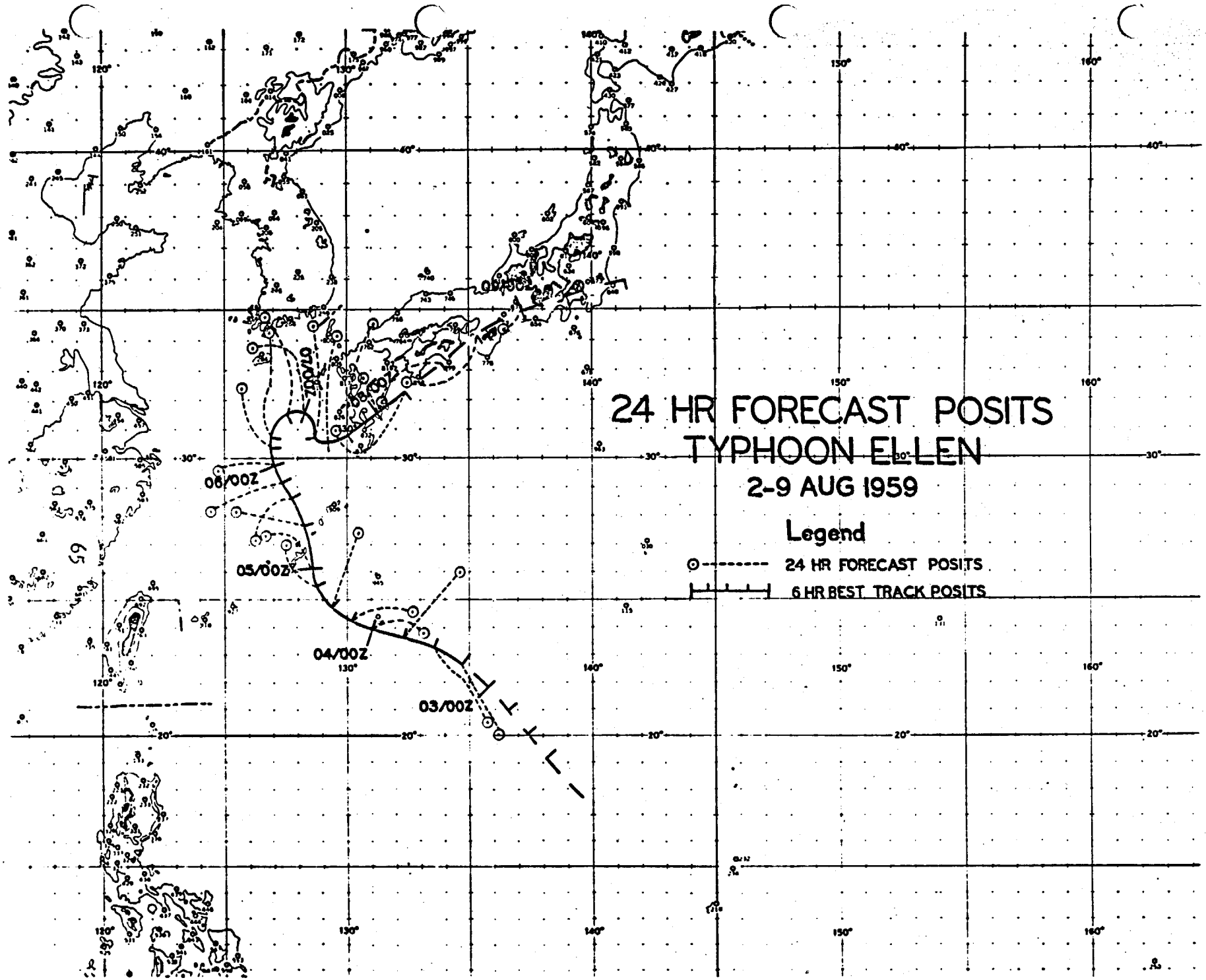
TYPHOON ELLEN 02 - 09 AUGUST 1959
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT. LONG.	12 HR ERROR DEG. DISTANCE	24 HR ERROR DEG. DISTANCE
020600Z	19.1N 138.1E	- - - -	- - - -
021200Z	20.1N 137.3E	- - - -	- - - -
021800Z	21.0N 136.5E	- - - -	- - - -
030000Z	21.9N 135.7E	157 - 141	- - - -
030600Z	22.7N 134.7E	006 - 55	- - - -
031200Z	23.3N 133.5E	143 - 61	146 - 216
031800Z	23.8N 132.3E	097 - 85	045 - 188
040000Z	24.0N 131.0E	035 - 108	095 - 115
040600Z	24.3N 130.2E	338 - 70	083 - 137
041200Z	24.8N 129.4E	330 - 62	019 - 160
041800Z	25.4N 128.8E	315 - 86	323 - 133
050000Z	26.2N 128.6E	158 - 46	300 - 125
050600Z	27.8N 128.2E	234 - 117	278 - 145
051200Z	28.7N 127.6E	225 - 55	219 - 123
051800Z	29.3N 127.3E	339 - 53	245 - 165
060000Z	29.8N 127.1E	002 - 91	264 - 117
060600Z	30.3N 126.9E	360 - 122	330 - 141
061200Z	30.8N 126.9E	004 - 107	359 - 210
061800Z	31.6N 127.4E	007 - 54	349 - 194
070000Z	31.6N 128.2E	353 - 32	351 - 212
070600Z	30.8N 128.7E	015 - 115	360 - 234
071200Z	30.6N 129.2E	008 - 87	007 - 210
071800Z	30.8N 130.0E	250 - 82	013 - 234
080000Z	31.5N 131.1E	068 - 33	347 - 84
080600Z	32.3N 132.3E	245 - 65	241 - 158
081200Z	33.3N 133.7E	220 - 37	233 - 145
081800Z	34.2N 135.3E	317 - 28	235 - 175
090000Z	34.9N 137.1E	- - - -	228 - 43
090600Z	35.4N 138.9E	- - - -	- - - -
091200Z	36.0N 141.3E	- - - -	- - - -

AVERAGE 12 HOUR FORECAST ERROR 74.7 NM
AVERAGE 24 HOUR FORECAST ERROR 158.8 NM


BEST TRACK
TYPHOON ELLEN
2-9 AUG 1959
Legend
6 HR BEST TRACK POSITS
AIRCRAFT FIX
SPEED
INTENSITY
KTS
INTENSITY ≥64 KTS
INTENSITY <64 KTS
09/00Z
08/00Z
07/00Z
06/00Z
05/00Z
04/00Z
03/00Z


12 HR FORECAST POSITS
TYPHOON ELLEN
2-9 AUG 1959
Legend
12 HR FORECAST POSITS
6 HR BEST TRACK POSITS
06/00Z
05/00Z
04/00Z
03/00Z
07/00Z
08/00Z
09/00Z
120°
130°
140°
150°
160°
40°
30°
20°


24 HR FORECAST POSITS
TYPHOON ELLEN
2-9 AUG 1959
Legend
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
06/00Z
05/00Z
04/00Z
03/00Z
07/00Z
08/00Z
120°
130°
140°
150°
160°
40°
30°
20°