

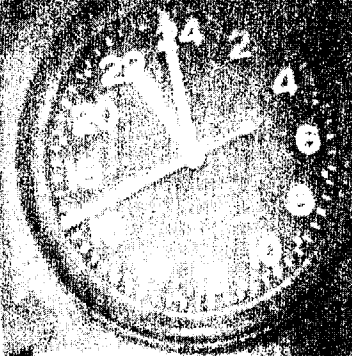
L. TYPHOON CARMEN (160000Z-240000Z AUGUST 1960)

A sharp trough was evident to the SE of T.S. AGNES, and when it became apparent that the winds were stronger 500 mi SE of AGNES than near its center, the development of another tropical storm or typhoon was indicated. At 160000Z the first T.D. warning was issued, and 12 hours later the T.D. was upgraded to T.S. CARMEN. CARMEN became a typhoon at 171200Z when it was about 125 mi SSW of Okinawa. The typhoon moved at an average speed of 3 kts along an inverted "S" track until it approached the S end of Okinawa from the SE. When it was 50 mi SE of Okinawa, CARMEN was downgraded to a T.S. The storm then moved NW until reaching 30N where it recurved, accelerated, and moved NNE, passing 140 mi E of Shanghai at 220600Z and 20 mi W of Seoul, Korea at 230200Z.

At the time it passed over Korea, CARMEN was moving at 36 kts and carried maximum winds of 45 kts. Typhoon CARMEN was large, about 800 mi in diameter, covering an area of more than 500,000 square mi, and it extended through 45,000 ft on 19 August. Another feature quite unusual about this typhoon was the diameter of its eye. Reconnaissance aircraft frequently reported eye diameters of 100 mi, using as the basis of measurement, surface winds and pressure gradient. However, with respect to wall clouds surrounding the eye, radar photographs taken from the CPS-9 at Kadena AB show quite clearly, that on 20 August, the eye had a diameter of approximately 200 mi (see photograph this chapter). The eye diameter of CARMEN was probably one of the largest ever reported. When the center of the eye approached the S tip of Okinawa, fog occurred at Naha and Kadena from 201600Z to 202200Z.

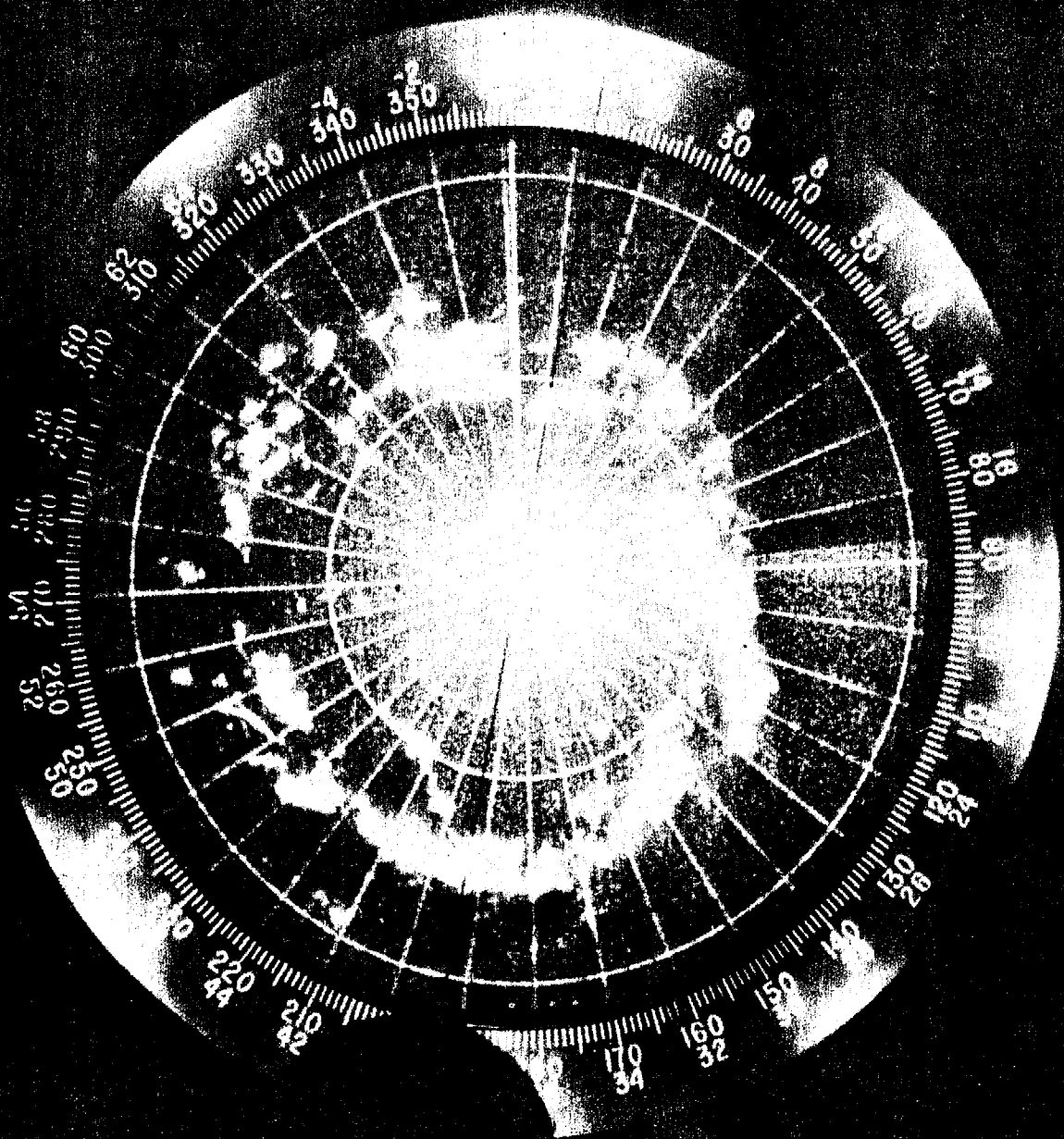
For a brief discussion of the surface synoptic situation at the time CARMEN formed, see narrative, Typhoon BESS. While warnings were being issued on CARMEN, warnings were also being issued on Typhoons BESS, DELLA and ELAINE. Also, the final warning on T.S. AGNES was issued at the time the first warning was issued on CARMEN.

The final warning on CARMEN was issued at 240000Z, when the storm was near 50N. CARMEN traveled a distance of 1,900 mi in 8 days, an average of 240 mi a day or a speed of 10 kts. During the first 5 days it traveled only 360 mi, but on the last day, it traveled 840 mi.

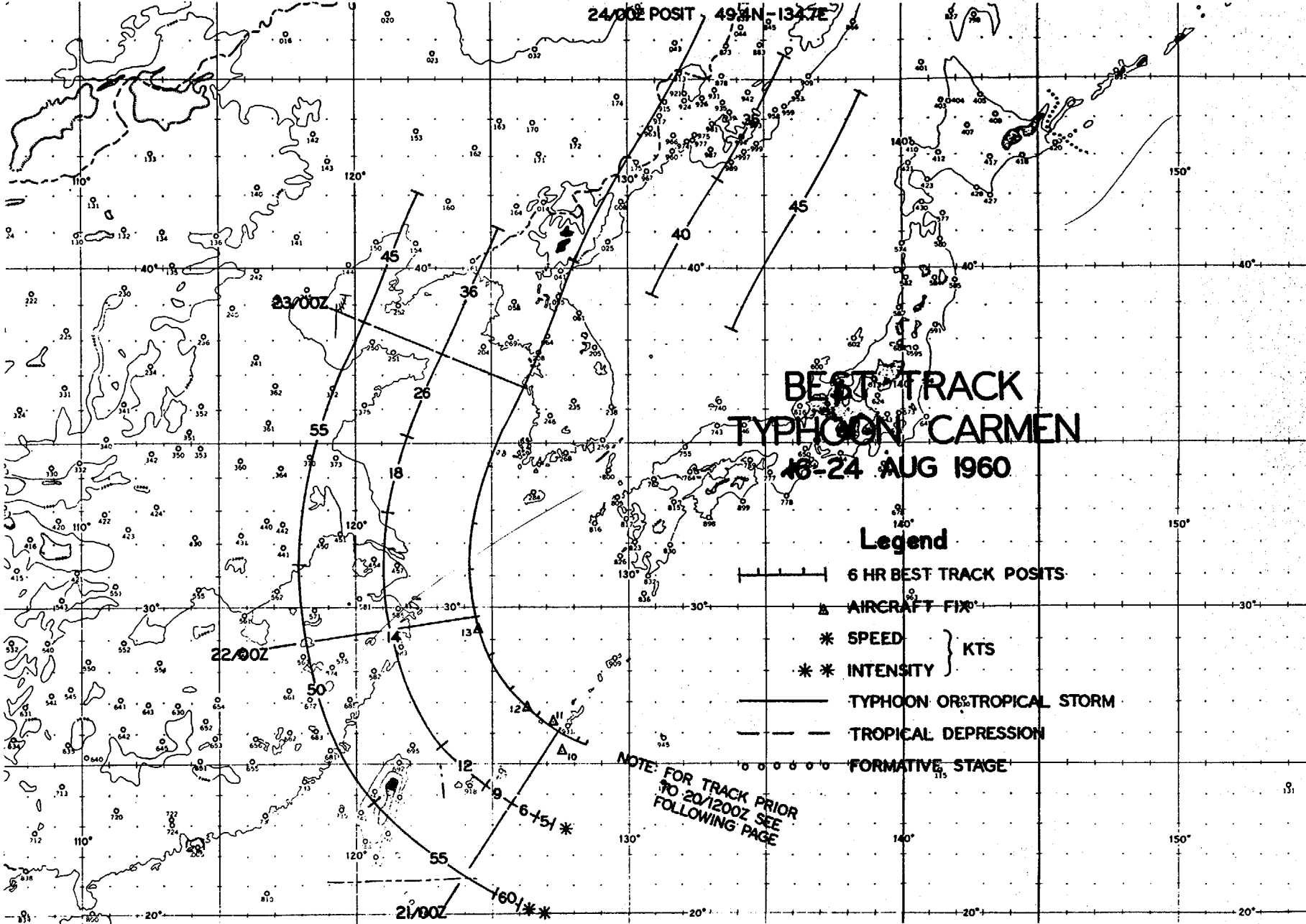


21010

'CARMEN'
200MI SWEEP
20 AUG '60
Z TIME
RADENA =



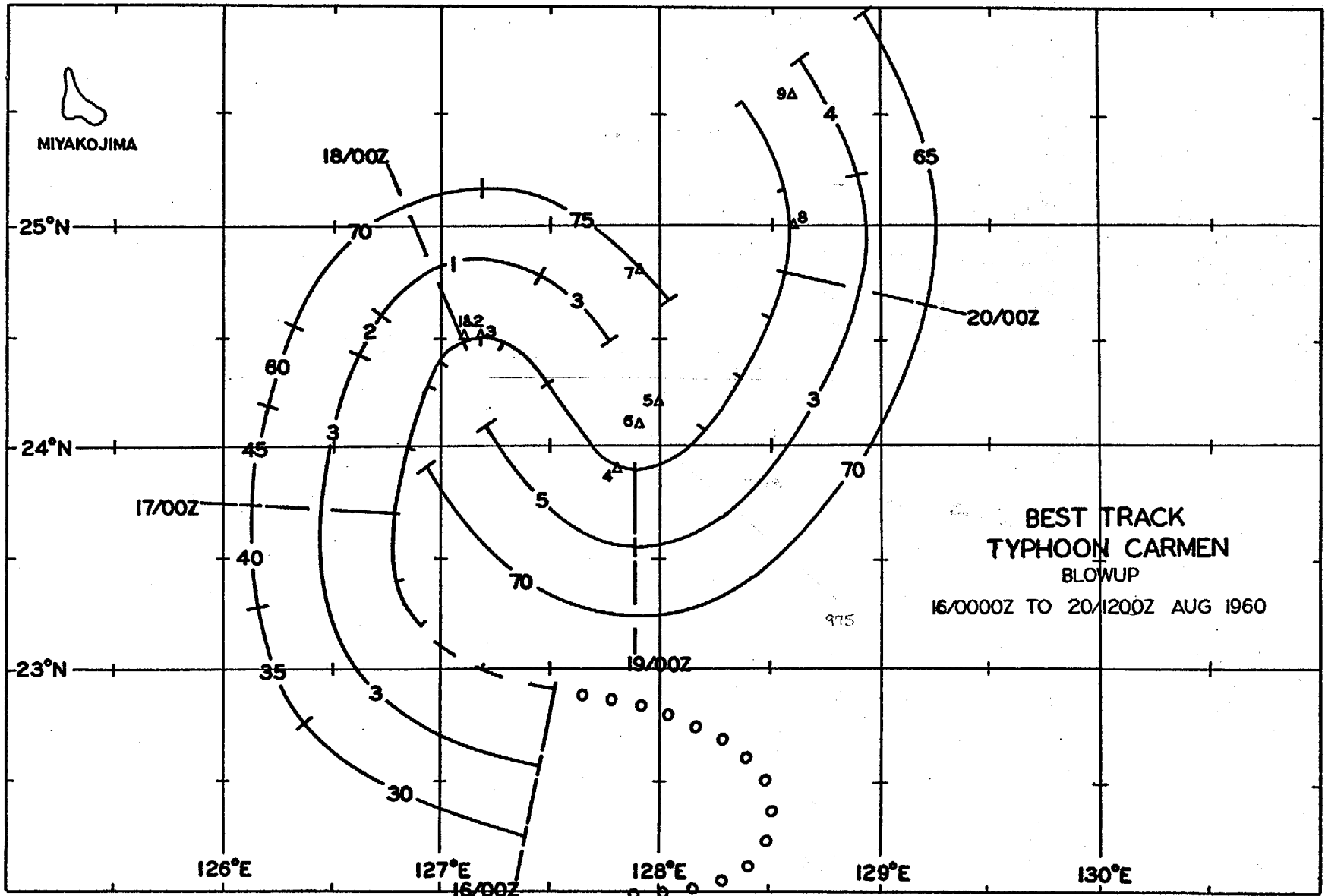
24/00Z POSIT 49.4N-134.7E



Legend

- 6 HR BEST TRACK POSITS
- ▲ AIRCRAFT FIX
- * SPEED
- ** INTENSITY
- TYPHOON OR TROPICAL STORM
- - - TROPICAL DEPRESSION
- o o o o o FORMATIVE STAGE

NOTE: FOR TRACK PRIOR
TO 20/1200Z SEE
FOLLOWING PAGE



RECONNAISSANCE AIRCRAFT FIXES - TYPHOON CARMEN

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MIN SLP MBS	MAX SFC WND	MIN 700MB HGT	MAX 700MB WND	700MB TT/Td (°C)	EYE CHARACTERISTICS
1	170800Z	24.5N	127.1E	315-P-20	- -	60	9740 ⁹⁸⁷	60	14/--	EYE ILL-DEFINED
2	180000Z	24.5N	127.1E	315-P-02	- -	70	9650 ⁹⁸³	45	16/--	ELLIP N/S 130X80 WALL CLD W
3	180800Z	24.5N	127.2E	56-P---	- -	75	9590 ⁹⁸¹	- -	18/--	ELLIP N/S 100X60
4	182215Z	23.9N	127.8E	56-P-03	970	50	9590 ⁹⁸¹	60	18/--	CIRC DIA 100 MI
5	190330Z	24.2N	128.0E	56-P-03	972	60	9540 ⁹⁸⁰	50	18/12	CIRC DIA 100 MI
6	190830Z	24.1N	127.9E	315-P-05	- -	65	9420 ⁹⁷⁵	- -	18/--	CIRC DIA 100 MI
7	200030Z	24.8N	127.9E	315-P-10	- -	65	9490	- -	18/--	EYE OPEN 100 MI DIA
8	200300Z	25.0N	128.6E	56-T-10	- -	55	- - -	60	- - -	CENTER NOT DEFINED
9	201035Z	25.6N	128.6E	56-P-02	978	60	9630	40	15/13	CIRC DIA 100MI WALL CLD NE & E
10	202200Z	25.3N	127.5E	315-P-02	- -	50	9600	- -	18/--	- - - - -
11	210400Z	26.3N	127.1E	56-P-02	980	50	9710	50	15/13	CIRC DIA 80 MI
12	210906Z	26.9N	126.2E	56-P-02	980	60	9650	80	15/14	HORSE SHOE SHAPE 70X50 MI
13	220141Z	29.3N	124.5E	56-P-04	975	45	9700	36	15/--	UNABLE TO DETERMINE

TYPHOON CARMEN 16-24 AUGUST 1960
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION		24 HR. ERROR		48 HR. ERROR	
	LAT.	LONG.	DEG.	DISTANCE	DEG.	DISTANCE
160000Z	22.9N	127.5E	-	-	-	-
160600Z	23.0N	127.2E	-	-	-	-
161200Z	23.2N	126.9E	-	-	-	-
161800Z	23.4N	126.8E	-	-	-	-
170000Z	23.7N	126.8E	-	-	-	-
170600Z	24.0N	126.8E	-	-	-	-
171200Z	24.3N	126.9E	-	-	-	-
171800Z	24.4N	127.0E	274	163	-	-
180000Z	24.5N	127.1E	274	191	-	-
180600Z	24.5N	127.2E	255	297	-	-
181200Z	24.5N	127.3E	275	11	-	-
181800Z	24.3N	127.5E	278	202	280	293
190000Z	23.9N	127.9E	313	84	284	342
190600Z	24.1N	128.2E	303	95	262	537
191200Z	24.3N	128.4E	281	74	278	70
191800Z	24.6N	128.5E	269	79	276	399
200000Z	24.8N	128.6E	240	76	306	167
200600Z	25.2N	128.6E	213	67	298	152
201200Z	25.6N	128.4E	202	93	230	97
201800Z	25.8N	128.1E	190	113	212	95
210000Z	26.1N	127.5E	100	78	180	110
210600Z	26.5N	126.7E	101	131	154	155
211200Z	27.4N	125.7E	088	204	149	224
211800Z	28.5N	124.9E	117	230	150	309
220000Z	29.8N	124.3E	157	260	123	312
220600Z	31.2N	124.1E	157	256	131	364
221200Z	32.6N	124.2E	210	229	122	376
221800Z	34.3N	124.9E	216	293	153	503
230000Z	36.7N	126.1E	-	-	-	-
230600Z	40.1N	128.0E	-	-	-	-
231200Z	43.6N	130.5E	-	-	-	-
231800Z	46.6N	132.9E	-	-	-	-
240000Z	49.4N	134.7E	-	-	-	-
AVERAGE 24 HOUR ERROR			154	MI		
AVERAGE 48 HOUR ERROR			265	MI		

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