F. TYPHOON HELEN (270600Z JULY - 031800Z AUGUST 1961)

A SMALL LOW BOUNDED BY A 1006 MB ISOBAR WAS NOTED AT 8.0N 150.0E ON THE 210600Z SURFACE CHART. THIS CIRCULATION MOVED W AND PASSED 150 MI S OF GUAM JUST AFTER 221800Z, AND THEN PASSED INTO THE LARGE TROUGH THAT EXTENDED FROM THE ASIATIC MAINLAND INTO THE PACIFIC OCEAN TOWARD GUAM. THE TROUGH THEN INTENSIFIED AND A CLOSED CIRCULATION FORMED THAT WAS FIRST OBSERVED ON THE 251200Z SURFACE CHART. THIS CIRCULATION DEEPENED AND FINALLY BECAME TYPHOON HELEN. THE FIRST WARNING WAS ISSUED AT 270600Z CLASSIFYING HELEN AS A STORM BASED ON WEATHER RECONNAISSANCE. HELEN BECAME A TYPHOON AT 280000Z, CONTINUED MOVING SLOWLY NNW TO NEAR 28.0N AND 129.8E WHERE IT LOOPED AND THE SURFACE WIND SPEEDS DECREASED FROM 80 KTS TO 45 KTS. THE LOOP OCCURRED AROUND AMAMI-O-SHIMA (47909), THUS WITH RECONNAISSANCE AND THE LAND STATION, SUFFICIENT DATA WAS AVAILABLE TO RECORD THE DIRECTION AND SPEED OF MOVEMENT. THE CYCLONIC LOOP WAS 20 BY 40 MI, ORIENTED WNW, AND REQUIRED ABOUT 24 HOURS TO COMPLETE. UPON COMPLETION OF THE LOOP, HELEN CONTINUED ALONG A NNW TRACK MISSING KYUSHU BY MOVING 35 MI TO THE W. THE TROPICAL STORM PASSED ONTO KOREA AT 021600Z ABOUT 60 MI WSW OF PUSAN, MOVED UP THE PENINSULA, TURNED TO THE NE AND DEPARTED THE COAST 45 MI SE OF WONSAN AT ABOUT THE TIME OF THE LAST WARNING, 031800Z. HELEN DID NOT REGAIN ITS INTENSITY AFTER LOOPING, BUT CONTINUED TO SLOWLY WEAKEN AND BECAME A TROPICAL DEPRESSION AT 030000Z.

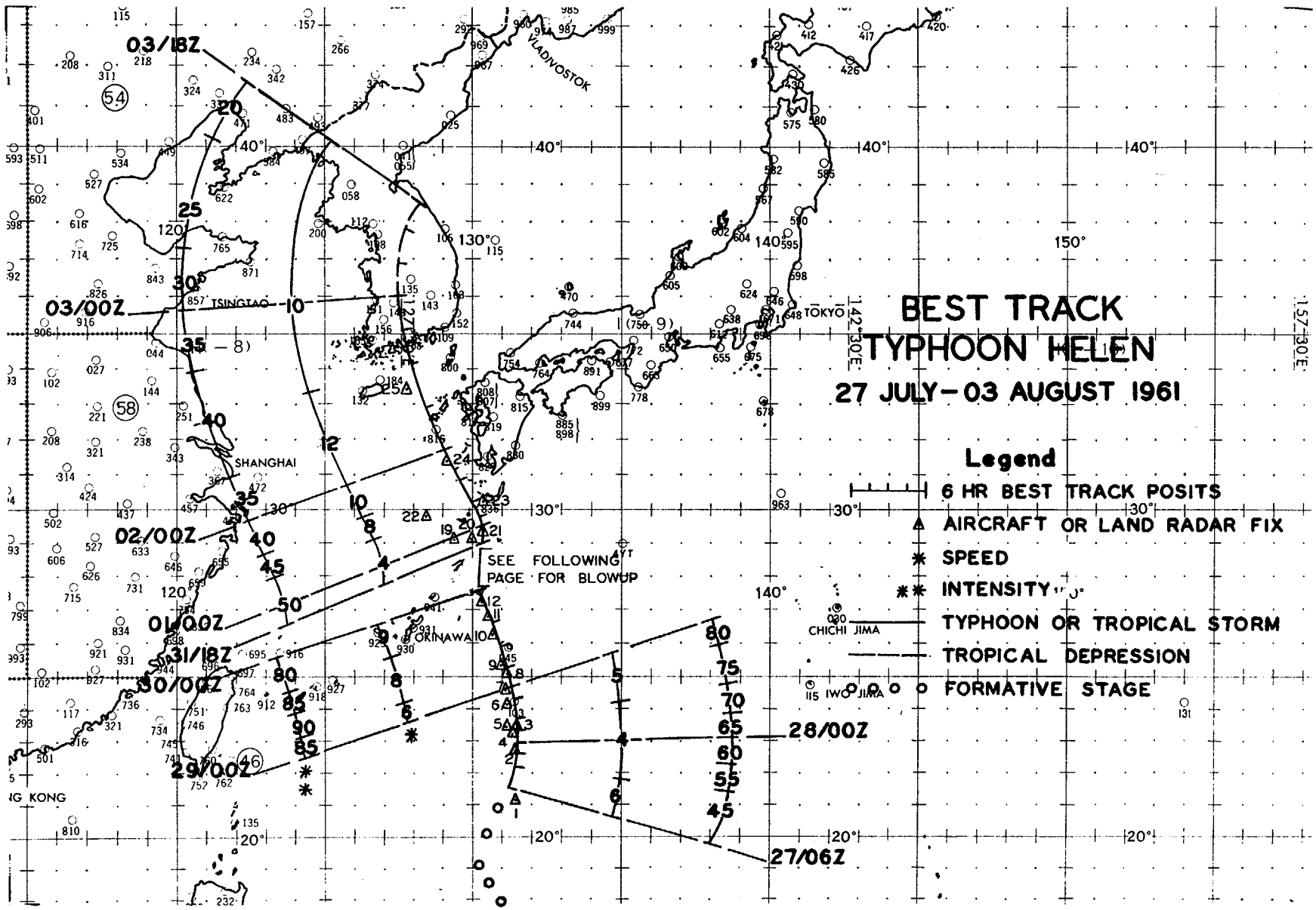
THE SYNOPTIC SITUATION RELATING TO TYPHOON HELEN CAN BEST BE INDICATED BY DESCRIBING THE 500 MB SPACE MEAN CHART AND THE MOVEMENT OF THE ASSOCIATED ANTICYCLONE NE OF HELEN DURING ITS LIFE CYCLE. A SIMILAR SITUATION OCCURRED WITH SEVERAL OTHER CYCLONES AND WILL BE REFERRED TO IN THE NARRATIVE OF OTHER TYPHOONS. THIS DESCRIPTION ALSO SATISFIES THE ACTIVITY THAT TRANSPIRED AT THE 200 MB LEVEL DURING THIS TIME INTERVAL. AT THE TIME OF ISSUE OF THE FIRST WARNING ON HELEN, AN ANTICYCLONE EXISTED NEAR 35N 150E WITH A TROUGH OVER THE ASIATIC MAINLAND ROUGHLY ALONG 110E. BY 280000Z THE ANTICYCLONE HAD MOVED SLIGHTLY E TO 32N 157E. TWENTY-FOUR HOURS LATER A WESTERLY MOVEMENT COMMENCED AND CONTINUED UNTIL THE ANTICYCLONE REACHED 30N 134E AT 040000Z. A SMALL RIDGE OF VARYING INTENSITY EXISTED IN THE SOUTH CHINA SEA DURING THIS PERIOD OF TIME. HELEN MOVED SLIGHTLY W OF N AS IT PASSED AROUND THE WESTERN SIDE OF THE PACIFIC ANTICYCLONE E OF JAPAN.

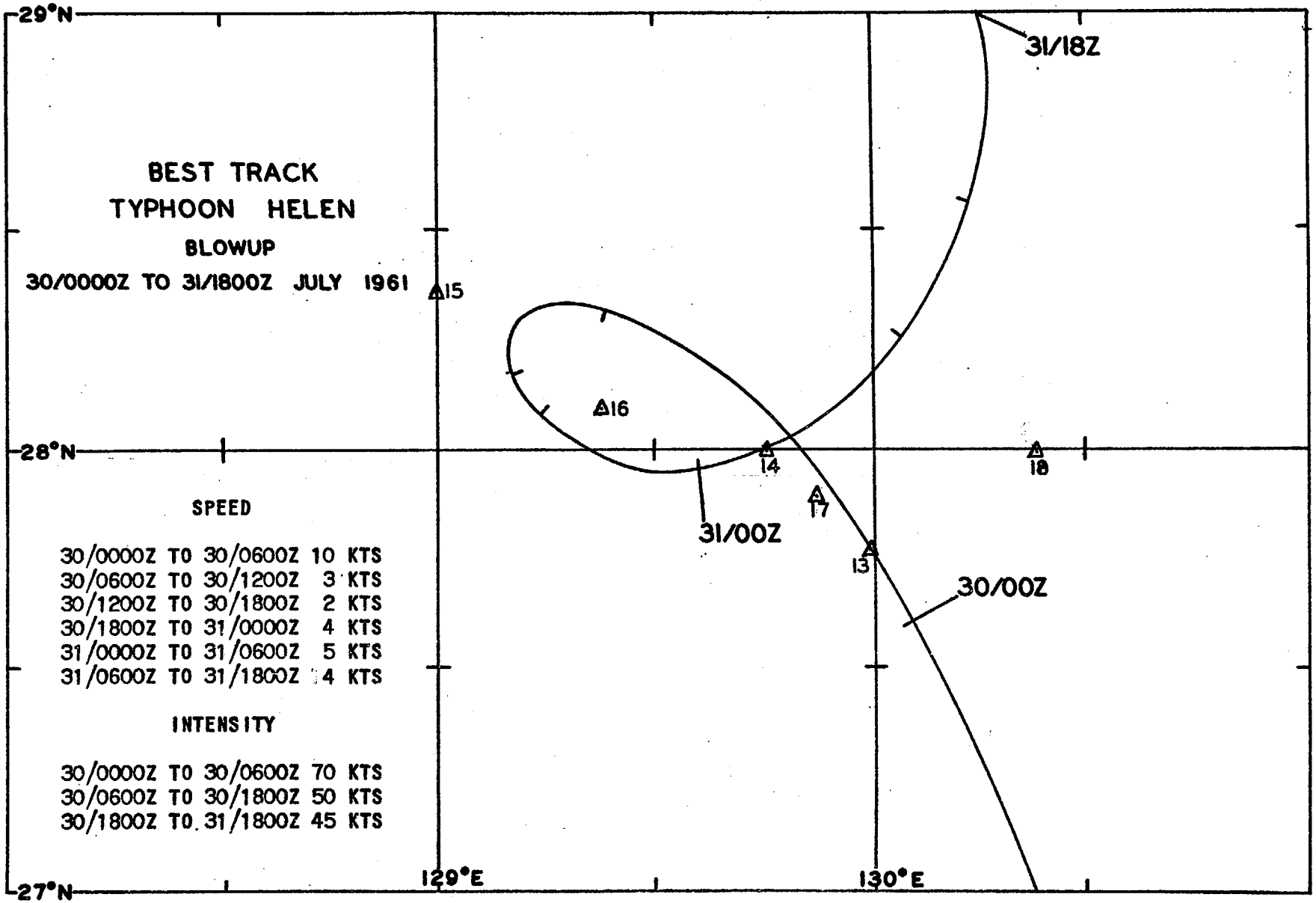
WITH THE EXCEPTION OF THE LOOP, HELEN CREATED NO FORECAST PROBLEMS OF AN UNUSUAL NATURE. THE TWO TYPHOONS, HELEN AND IDA, BETTER KNOWN AS THE TWINS, CREATED FORECAST DIFFICULTIES THAT WILL BE DISCUSSED IN THE IDA NARRATIVE.

TYPHOON HELEN TRAVELED 1195 MI IN 7 AND ONE HALF DAYS AT AN AVERAGE SPEED OF 6.6 KTS OR 159 MI PER DAY, FROM FIRST TO LAST WARNING. THE MINIMUM SPEED WAS 2 KTS BETWEEN 301200Z AND 301800Z; THE MAXIMUM SPEED WAS 12 KTS BETWEEN 020000Z AND 021200Z. THE MAXIMUM

SURFACE WIND WAS 90 KTS BETWEEN 290600Z AND 291200Z.

AMAMI-O-SHIMA AND OTHER ISLANDS NEARBY WERE THE ONLY AREAS AFFECTED BY HELEN, EVEN THOUGH THE TYPHOON WAS NEAR KYUSHU AND EVENTUALLY PASSED ONTO KOREA. THE TYPHOON IS REPORTED TO HAVE INUNDATED ABOUT 2,000 HOUSES, CAUSED TWO DEATHS AND SEVERAL INJURIES ON THESE ISLANDS JUST S OF KYUSHU.


BEST TRACK
TYPHOON HELEN
27 JULY – 03 AUGUST 1961
Legend
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
SEE FOLLOWING PAGE FOR BLOWUP
03/18Z
03/00Z
02/00Z
01/00Z
31/18Z
30/00Z
29/00Z
28/00Z
27/06Z
TSINGTAO
SHANGHAI
OKINAWA
TOKYO
VLADIVOSTOK
CHICHI JIMA
IWO JIMA
HONG KONG
142°30'E
157°30'E


BEST TRACK
TYPHOON HELEN
BLOWUP
30/0000Z TO 31/1800Z JULY 1961
SPEED
30/0000Z TO 30/0600Z 10 KTS
30/0600Z TO 30/1200Z 3 KTS
30/1200Z TO 30/1800Z 2 KTS
30/1800Z TO 31/0000Z 4 KTS
31/0000Z TO 31/0600Z 5 KTS
31/0600Z TO 31/1800Z 4 KTS
INTENSITY
30/0000Z TO 30/0600Z 70 KTS
30/0600Z TO 30/1800Z 50 KTS
30/1800Z TO 31/1800Z 45 KTS
29°N
28°N
27°N
129°E
130°E
31/18Z
31/00Z
30/00Z
13
14
15
16
17
18

LAND RADAR AND AIRCRAFT FIXES - TYPHOON HELEN

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/TD (°C)	EYE CHARACTERISTICS
1	270632Z	21.1N	131.5E	VW1-P-02	45	---	----	990	-----	DIA 15 MI
2	272200Z	22.7N	131.5E	56-P-07	70	50	9880	992	16/11	CIRC DIA 50MI
3	280500Z	23.5N	131.5E	VW1-R-02	---	---	----	---	-----	ELLIP 8X12 MI
4	280657Z	23.3N	131.4E	VW1-R-03	---	---	----	---	-----	CIRC DIA 18MI
5	280900Z	23.4N	131.3E	56-P-04	75	45	9700	987	16/13	CIRC DIA 40MI OPEN NE
6	281530Z	24.1N	131.3E	VW1-R-05	---	---	----	---	-----	DIA 27MI OPEN S
7	282200Z	24.4N	131.2E	56-P-00	70	60	9480	978	17/14	OPEN W DIA 25MI
8	290330Z	25.0N	131.3E	56-P-01	75	60	9570	979	16/14	CIRC 20MI DIA
9	290900Z	25.3N	131.0E	56-P-05	80	65	9370	971	17/12	CIRC 20MI DIA OPEN SE TO S
10	291335Z	26.3N	130.8E	VW1-R-04	---	---	----	---	-----	DIA 27MI
11	291830Z	26.8N	130.5E	LND/RDR	---	---	----	---	-----	----------
12	292200Z	27.3N	130.3E	56-P-01	100	65	9510	976	19/15	CIRC WELL DEFINED WALL CLDS
13	300145Z	27.8N	130.0E	56-P-03	100	70	9490	---	19/14	CIRC 40MI DIA WELL DEFINED
14	300400Z	28.0N	129.8E	56-P-01	100	75	9490	976	18/14	CIRC 30MI DIA
15	301600Z	28.4N	129.0E	VW1-R-05	---	---	----	---	-----	WELL DEFINED EYE
16	302230Z	28.1N	129.4E	56-P-1/2	40	30	9890	986	12/10	CIRC 50MI DIA OPEN E-S
17	310330Z	27.9N	129.9E	56-P-1/2	---	30	9890	982	15/13	CIRC DIA 50MI
18	310600Z	28.0N	130.4E	56-P-1/2	65	40	9910	987	17/13	CIRC DIA 50MI
19	311445Z	29.0N	129.5E	VW1-P-20	---	---	----	---	-----	40MI DIA NO WALL CLDS
20	312155Z	29.1N	130.0E	56-P-02	40	30	9890	986	13/12	POORLY DEFINED
21	010854Z	29.2N	130.5E	USN-R-01	---	---	----	---	-----	3 MI DIA WALL CLDS ALL QUADS
22	010930Z	29.8N	128.5E	56-P-05	30	40	9920	988	14/13	POORLY DEFINED

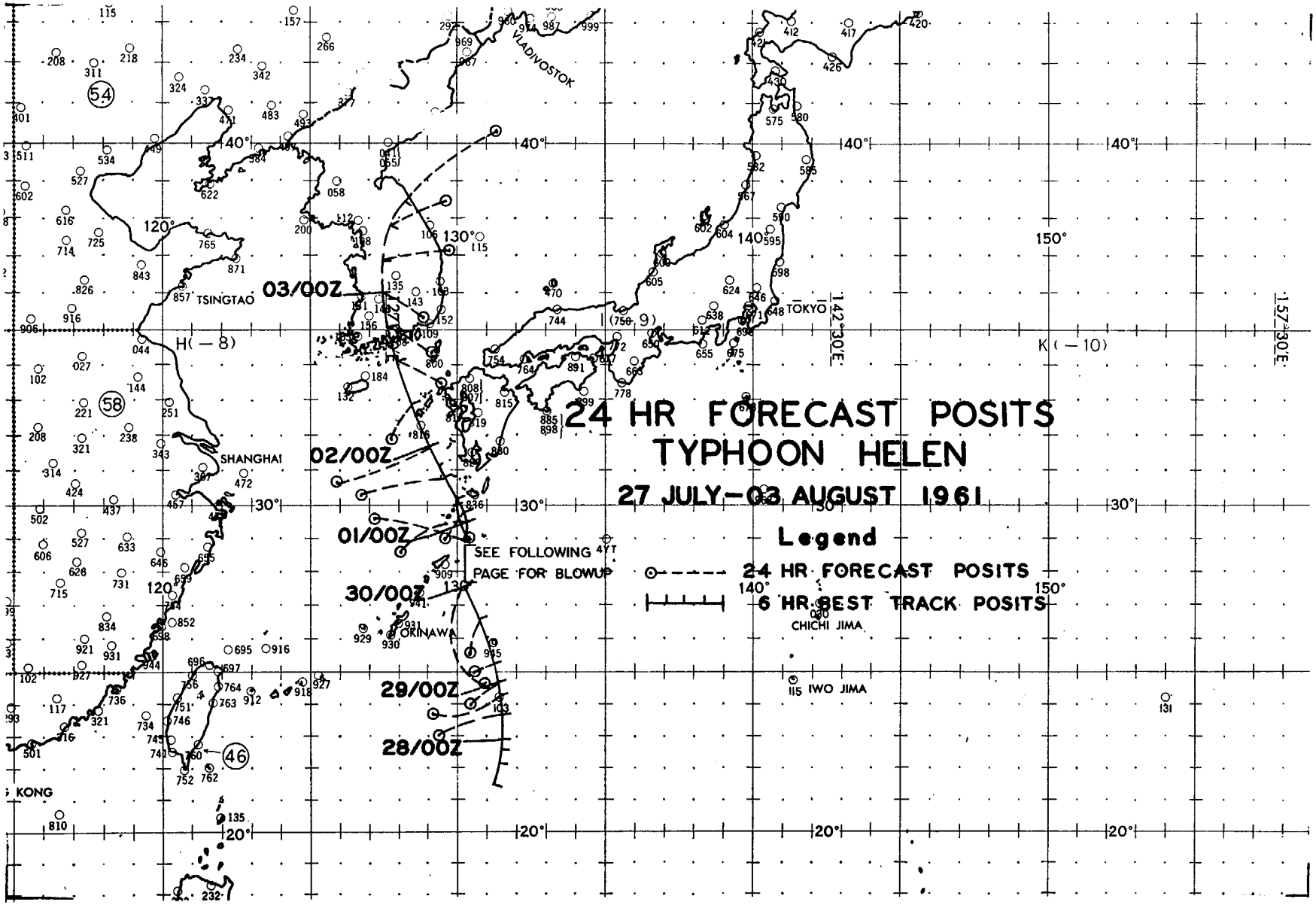
LAND RADAR AND AIRCRAFT FIXES - TYPHOON HELEN (CONT'D)

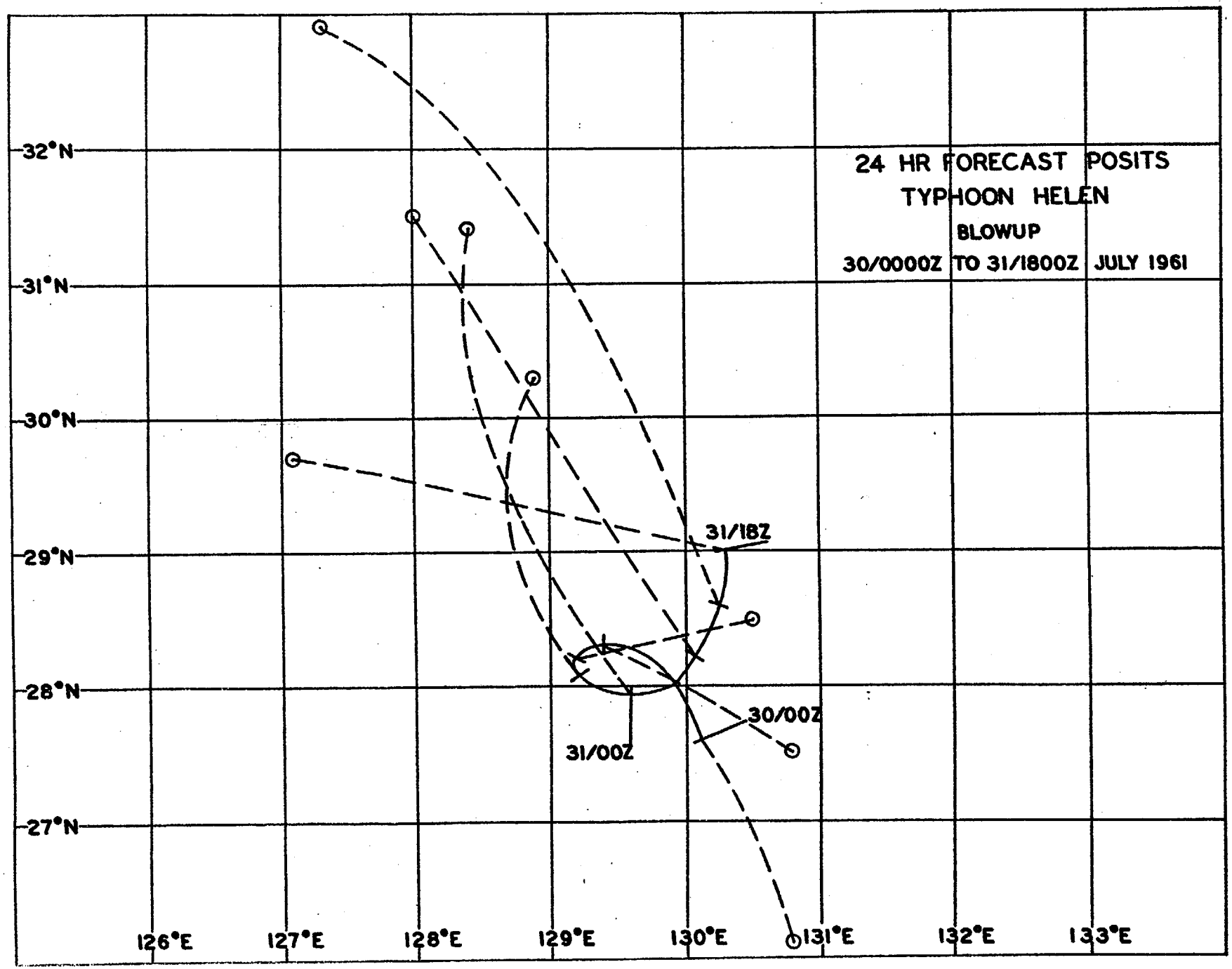
FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/TD (°C)	EYE CHARACTERISTICS
23	011200Z	30.1N	130.4E	USN-R-02	---	---	----	---	-----	DIA 4 MI
24	012130Z	31.4N	129.1E	56-P-02	25	---	9810	983	15/11	VERY DIFFUSE
25	020930Z	33.2N	127.9E	56-P-05	30	30	9770	985	14/12	CIRC 10 MI DIA

TYPHOON HELEN 27 JUL-03 AUG 1961
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG.	DISTANCE	48 HR. ERROR DEG.	DISTANCE
270600Z	21.5N	131.3E	-------		-------	
271200Z	22.1N	131.4E	-------		-------	
271800Z	22.5N	131.6E	-------		-------	
280000Z	22.8N	131.7E	-------		-------	
280600Z	23.3N	131.6E	254	127	-------	
281200Z	23.7N	131.5E	269	133	-------	
281800Z	24.2N	131.4E	260	52	-------	
290000Z	24.6N	131.3E	125	46	-------	
290600Z	25.3N	131.1E	115	41	268	212
291200Z	25.9N	130.8E	350	70	270	210
291800Z	26.7N	130.5E	345	110	218	75
300000Z	27.6N	130.1E	335	100	206	54
300600Z	28.3N	129.4E	125	78	194	67
301200Z	28.3N	129.2E	080	83	148	170
301800Z	28.1N	129.2E	170	130	144	138
310000Z	27.9N	129.6E	165	210	295	56
310600Z	28.2N	130.1E	154	230	164	156
311200Z	28.6N	130.2E	150	300	164	185
311800Z	29.0N	130.3E	112	110	155	462
010000Z	29.4N	130.2E	068	127	158	481
010600Z	29.8N	130.1E	210	50	146	358
011200Z	30.2N	130.0E	348	68	148	467
011800Z	30.9N	129.7E	257	145	109	257
020000Z	31.8N	129.2E	251	178	234	200
020600Z	32.9N	128.7E	215	78	221	169
021200Z	34.1N	128.1E	230	153	210	175
021800Z	35.1N	127.8E	118	70	224	280
030000Z	36.0N	127.4E	128	88	236	335
030600Z	36.9N	127.2E	088	130	256	130
031200Z	37.9N	127.6E	067	108	260	167
031800Z	38.7N	128.3E	053	185	066	123

AVERAGE 24 HOUR ERROR 119 MI
AVERAGE 48 HOUR ERROR 214 MI


24 HR FORECAST POSITS
TYPHOON HELEN
27 JULY–03 AUGUST 1961
Legend
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
03/00Z
02/00Z
01/00Z
30/00Z
29/00Z
28/00Z
SEE FOLLOWING PAGE FOR BLOWUP
TSINGTAO
SHANGHAI
TOKYO
VLADIVOSTOK
OKINAWA
CHICHI JIMA
IWO JIMA
H(−8)
K(−10)
142°30'E
157°30'E


24 HR FORECAST POSITS
TYPHOON HELEN
BLOWUP
30/0000Z TO 31/1800Z JULY 1961
32°N
31°N
30°N
29°N
28°N
27°N
126°E
127°E
128°E
129°E
130°E
131°E
132°E
133°E
31/18Z
30/00Z
31/00Z