TYPHOON HELEN - 271800Z to 031200Z JULY-AUGUST

I. DATA

A. Statistics

1. Calendar days of tropical warning - 7
2. Calendar days of typhoon intensity - 4 3/4
3. Total distance traveled during tropical warning period - 1920 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 931mb, 300315Z
2. Minimum observed 700mb height - 2521m, 300315Z
3. Maximum surface wind - 130 kts
4. Max radius of surface circulation - 450 mi

II. DEVELOPMENT

A. Initial impetus - Fracture of MPT

B. Initial surface vortex

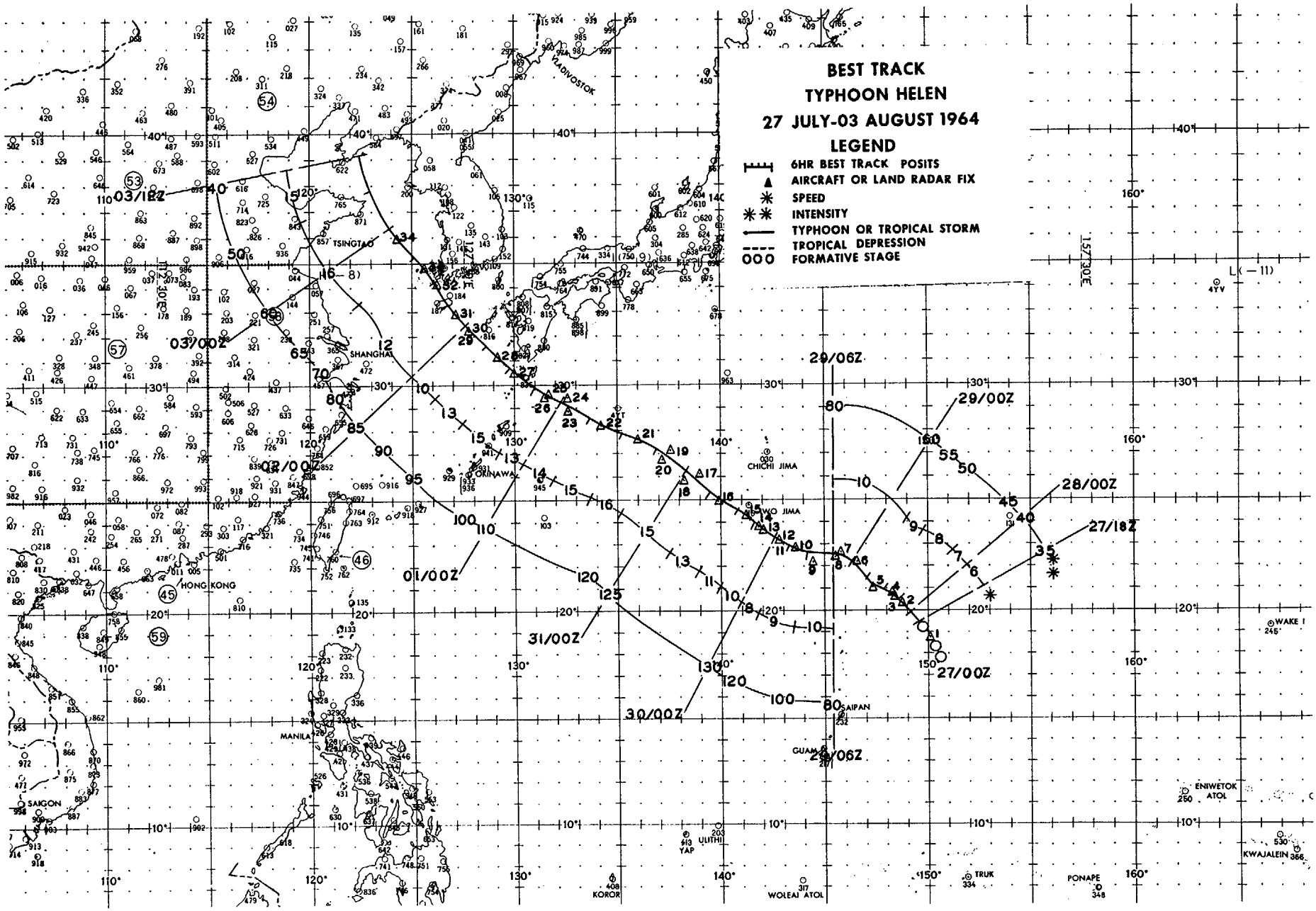
1. Junction vortex at 270000Z
2. Surface pressure less than 1008mb

C. 200mb flow above surface vortex

1. Initial - W quad of anticyclone
2. Upon reaching typhoon intensity - Center of outdraft

III. FINAL DISPOSITION

A. Dissipated over land


BEST TRACK
TYPHOON HELEN
27 JULY-03 AUGUST 1964
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
VLADIVOSTOK
TSINGTAO
SHANGHAI
ORINAWA
CHICHI JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
KWAJALEIN
WAKE I
03/18Z
03/00Z
02/00Z
01/00Z
31/00Z
30/00Z
29/06Z
29/00Z
28/00Z
27/18Z
27/00Z
157°30'E

EYE FIXES TYPHOON HELEN

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	270911Z	18.8N 150.1E	VW1-P-5	1500ft	--	20	1000	---	22/--	OVAL 27 MI DIA WALL CLDS FORMING
2	280303Z	20.3N 148.8E	54-R-15	30000ft	--	--	---	---	--/--	
3	280700Z	20.5N 148.5E	56-P-3	700mb	20	40	994	3057	9/9	CIRC 12 MI DIA
4	280947Z	20.7N 148.4E	VW1-R-3	10000ft	--	--	---	---	--/--	CIRC 11 MI DIA WALL CLDS BROKEN W SEMI
5	281615Z	21.0N 147.3E	VW1-R-5	1500ft	--	--	---	---	--/--	E-W DIA 11 MI OPEN N SEMI WALL CLDS 3-5 MI THICK
6	282230Z	22.1N 146.5E	56-P-2	700mb	45	45	989	2951	17/12	OVAL 7 MI E/W 5 MI N/S
7	290330Z	22.6N 145.8E	56-P-10	700mb	65	85	984	2874	18/12	CIRC 12 MI DIA
8	290600Z	22.4N 145.3E	54-R-5	33000ft	--	--	---	---	--/--	CIRC 20 MI DIA
9	290945Z	22.2N 144.5E	VW1-P-3	500ft	--	65	973	---	25/21	CIRC 15 MI DIA
10	291545Z	22.9N 143.6E	VW1-R-5	7000ft	--	--	---	---	--/--	OVAL 13 MI E/W 10 MI N/S WALL CLDS 3-5 MI THICK
11	292155Z	23.2N 142.8E	54-R-3	30000ft	--	60	---	---	--/--	CIRC 10 MI DIA
12	292200Z	23.2N 142.8E	56-P-1	700mb	70	130	946	2624	15/12	CIRC 7 MI DIA
13	300315Z	23.7N 142.1E	56-P-1	700mb	70	150	931	2521	20/15	CIRC 5 MI DIA STRONG SOLID WALL CLDS ALL QUADS
14	300425Z	23.8N 141.9E	54-R-5	30000ft	--	--	---	---	--/--	CIRC 10 MI DIA
15	300940Z	24.4N 141.2E	VW1-R-3	9000ft	--	--	---	---	--/--	CONCENTRIC EYES 7 MI DIA & 50 MI DIA

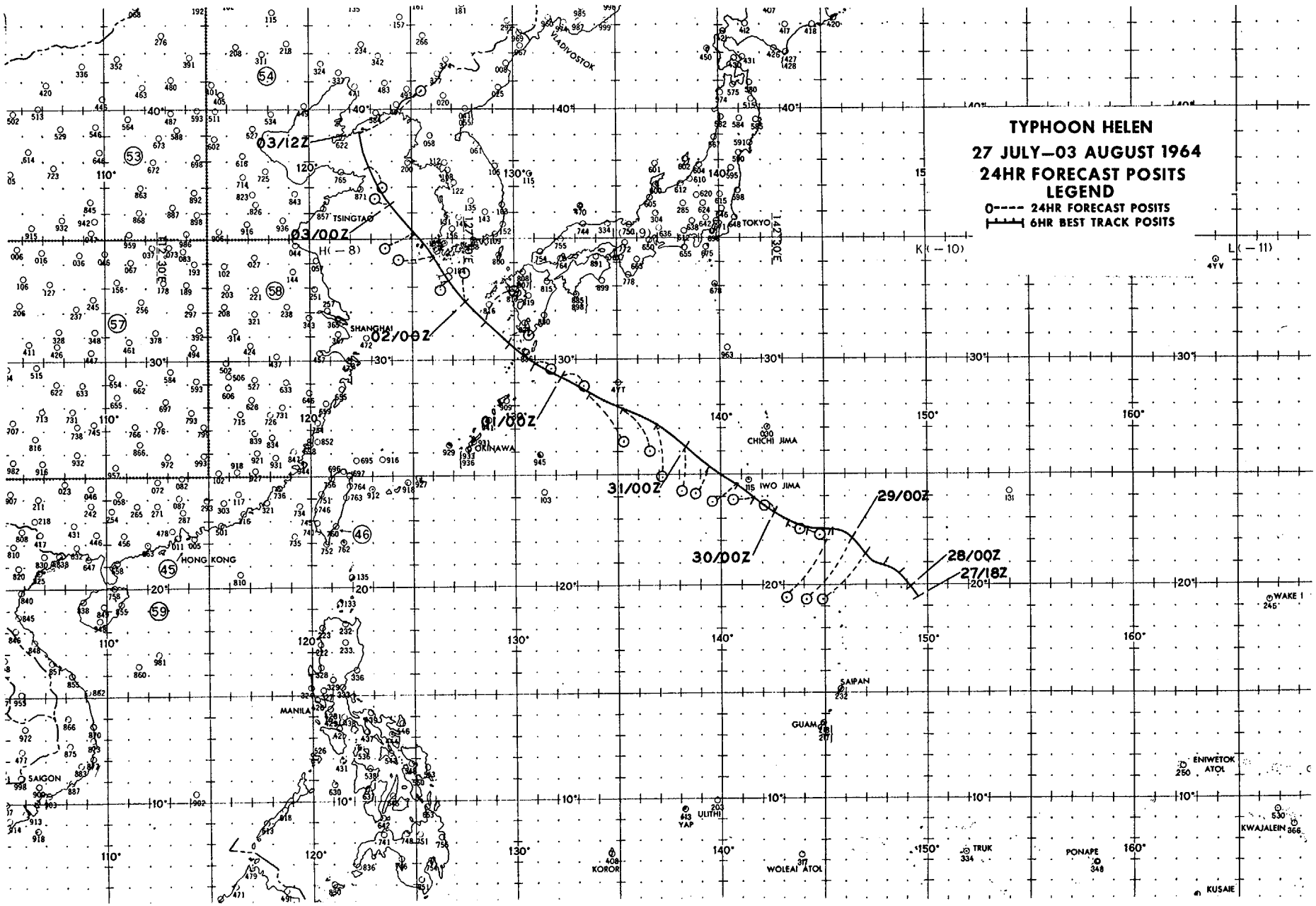
FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
16	301555Z	25.0N 139.9E	VW1-R-3	9500ft	--	--	---	---	--/--	CIRC 12 MI DIA WALL CLDS 8 MI THICK S SEMI & 3 MI THICK N SEMI
17	302200Z	26.1N 139.0E	54-R-5	29000ft	--	90	---	---	--/--	CIRC 10 MI DIA
18	302215Z	25.8N 138.2E	56-P-3	700mb	85	125	956	2740	19/16	CIRC 110 MI DIA OPEN W & SW MULTIPLE CENTERS
19	310400Z	27.2N 137.6E	54-R-10	30000ft	--	--	---	---	--/--	ELLIP 60 X 70 MI
20	310400Z	26.7N 137.2E	56-P-3	700mb	100	125	954	2725	20/16	CIRC 110 MI DIA OPEN SE SEMI
21	310950Z	27.7N 136.0E	VW1-P-3	100ft	--	130	---	---	26/18	CIRC 25 MI DIA CLSD
22	311530Z	28.2N 134.2E	VW1-R-5	1000ft	--	--	---	---	--/--	CIRC 25 MI DIA CLSD
23	312200Z	28.9N 132.7E	56-P-3	700mb	75	120	967	2810	17/14	CIRC 110 MI DIA OPEN NE
24	312200Z	29.3N 132.7E	54-R-5	29000ft	40	---	---	---	-17/--	CIRC 70 MI DIA
25	010400Z	29.6N 131.6E	56-P-2	698mb	90	100	967	2813	17/7	CIRC 30 MI DIA OPEN E
26	010400Z	29.4N 131.4E	54-R-5	31000ft	--	50	---	---	--/--	CIRC 40 MI DIA OPEN E
27	011000Z	30.4N 130.0E	VW1-R-5	1500ft	--	--	---	---	--/--	CIRC 47 MI DIA OPEN SE WALL CLD 10 MI THICK
28	011545Z	31.2N 129.2E	VW1-R-3	3700ft	--	--	---	---	--/--	CIRC 52 MI DIA OPEN NW WALL CLD 13 MI THICK
29	012155Z	32.2N 127.8E	54-R-5	30000ft	--	--	---	---	--/--	OVAL 25 X 35 MI OPEN S & SW QUADS
30	012200Z	32.2N 127.8E	56-P-1	700mb	80	75	968	2822	17/16	CIRC 30 MI DIA OPEN W
31	020330Z	32.8N 127.2E	56-P-2	500mb	60	45	977	2903	1/1	700MB TEMP 15 EYE CIRC 50 MI DIA OPEN S

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
32	021000Z	34.0N 126.3E	VW1-R-1	4000ft	--	--	---	---	--/--	OVAL 30 MI DIA OPEN SW
33	021530Z	34.9N 125.7E	VW1-R-10	4000ft	--	--	---	---	--/--	POORLY DEFINED NE SEMI
34	022145Z	36.0N 124.3E	56-P-2	700mb	55	--	980	2908	15/15	EYE FILLED WITH CLOUDS

TYPHOON HELEN 27 JUL-03 AUG 1964
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
271800Z	19.5N	149.5E	------	------
280000Z	20.0N	149.1E	------	------
280600Z	20.5N	148.6E	------	------
281200Z	20.9N	147.9E	------	------
281800Z	21.3N	147.0E	224-168	------
290000Z	22.1N	146.2E	215-210	------
290600Z	22.4N	145.2E	212-215	------
291200Z	22.5N	144.1E	118-38	------
291800Z	22.9N	143.3E	128-35	211-227
300000Z	23.3N	142.6E	307-30	210-244
300600Z	23.9N	141.7E	267-67	208-276
301200Z	24.7N	140.7E	229-76	184-87
301800Z	25.3N	139.5E	207-80	177-115
310000Z	26.3N	138.2E	184-122	187-115
310600Z	27.2N	136.9E	176-138	208-150
311200Z	27.8N	135.3E	149-127	185-166
311800Z	28.4N	133.7E	146-147	169-189
010000Z	29.3N	132.3E	116-55	162-220
010600Z	29.8N	131.0E	104-45	161-235
011200Z	30.8N	129.7E	076-60	149-233
011800Z	31.6N	128.5E	045-104	153-265
020000Z	32.3N	127.7E	003-75	090-120
020600Z	33.3N	126.8E	226-35	093-160
021200Z	34.3N	126.0E	263-88	085-227
021800Z	35.2N	125.1E	247-77	072-480
030000Z	36.4N	123.9E	280-35	073-420
030600Z	37.7N	123.0E	146-58	160-32
031200Z	39.2N	122.3E	061-175	061-117

AVERAGE 24 HOUR ERROR 94 MI
AVERAGE 48 HOUR ERROR 204 MI


TYPHOON HELEN
27 JULY—03 AUGUST 1964
24HR FORECAST POSITS
LEGEND
24HR FORECAST POSITS
6HR BEST TRACK POSITS
03/12Z
03/00Z
02/00Z
01/00Z
31/00Z
30/00Z
29/00Z
28/00Z
27/18Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
OKINAWA
TOKYO
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
KWAJALEIN
ENIWETOK ATOL
WAKE I
H(−8)
K(−10)
L(−11)