TROPICAL CYCLONE 25 - 08/31/0600Z TO 09/14/1200Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 69
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 57
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 2544 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 752MBS AT 031535Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2331M. AT 031535Z
3. MAXIMUM SURFACE WIND - 155 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 550 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - DEVELOPMENT OF DIVERGENCE AT 200MB LEVEL OVER SURFACE CYCLONIC CIRCULATION

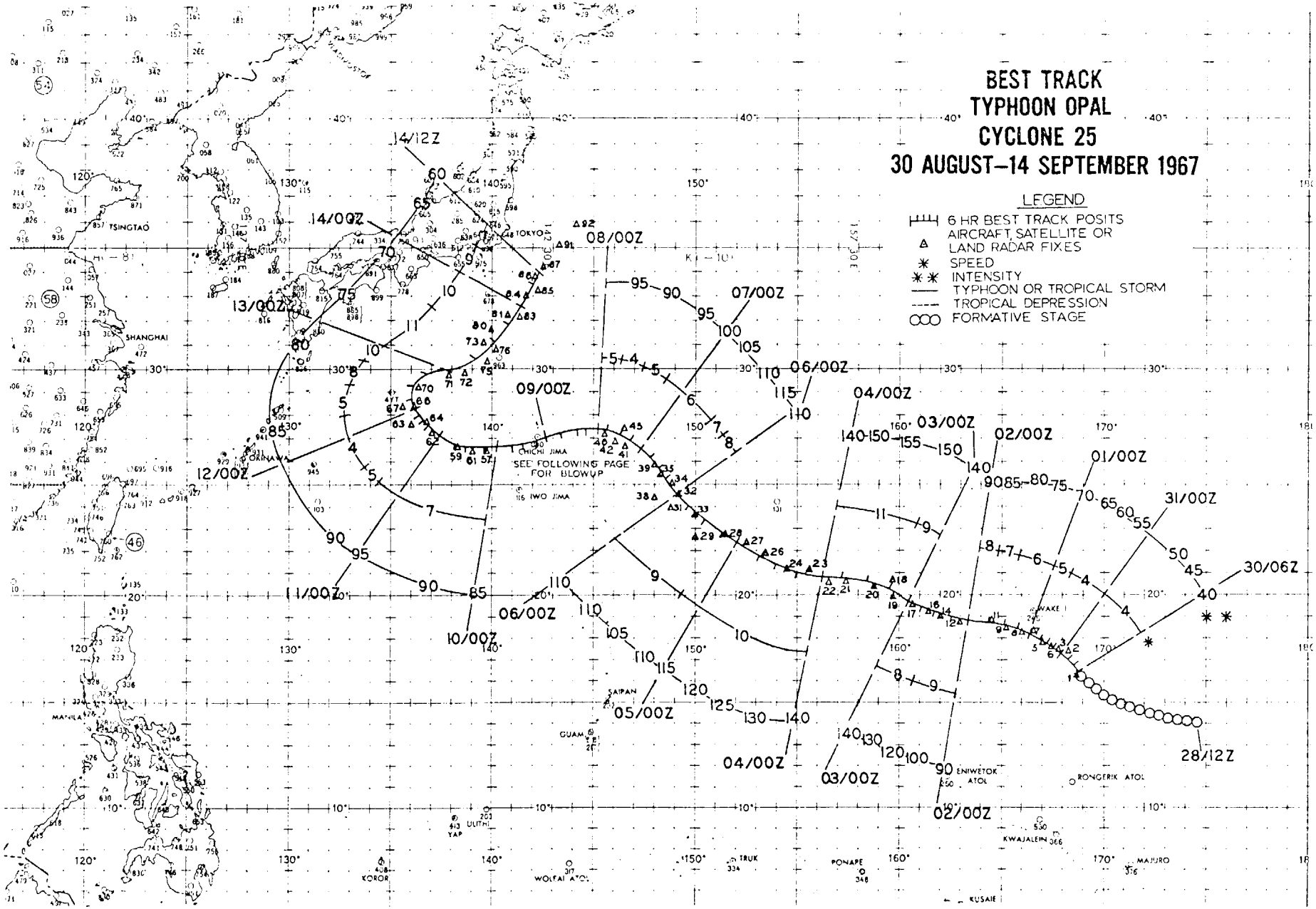
B. INITIAL SURFACE VORTEX

1. EMBEDDED VORTEX AT 281200Z
2. SURFACE PRESSURE LESS THAN 1008MB

C. 200MB FLOW ABOVE SURFACE VORTEX

1. INITIAL - NORTH
2. UPON REACHING TYPHOON INTENSITY - NORTH

III. FINAL DISPOSITION - BECAME EXTRATROPICAL


BEST TRACK
TYPHOON OPAL
CYCLONE 25
30 AUGUST–14 SEPTEMBER 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
SEE FOLLOWING PAGE FOR BLOWUP
TSINGTAO
SHANGHAI
OKINAWA
TOKYO
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
MANILA
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
WAKE I
14/12Z
14/00Z
13/00Z
12/00Z
11/00Z
10/00Z
09/00Z
08/00Z
07/00Z
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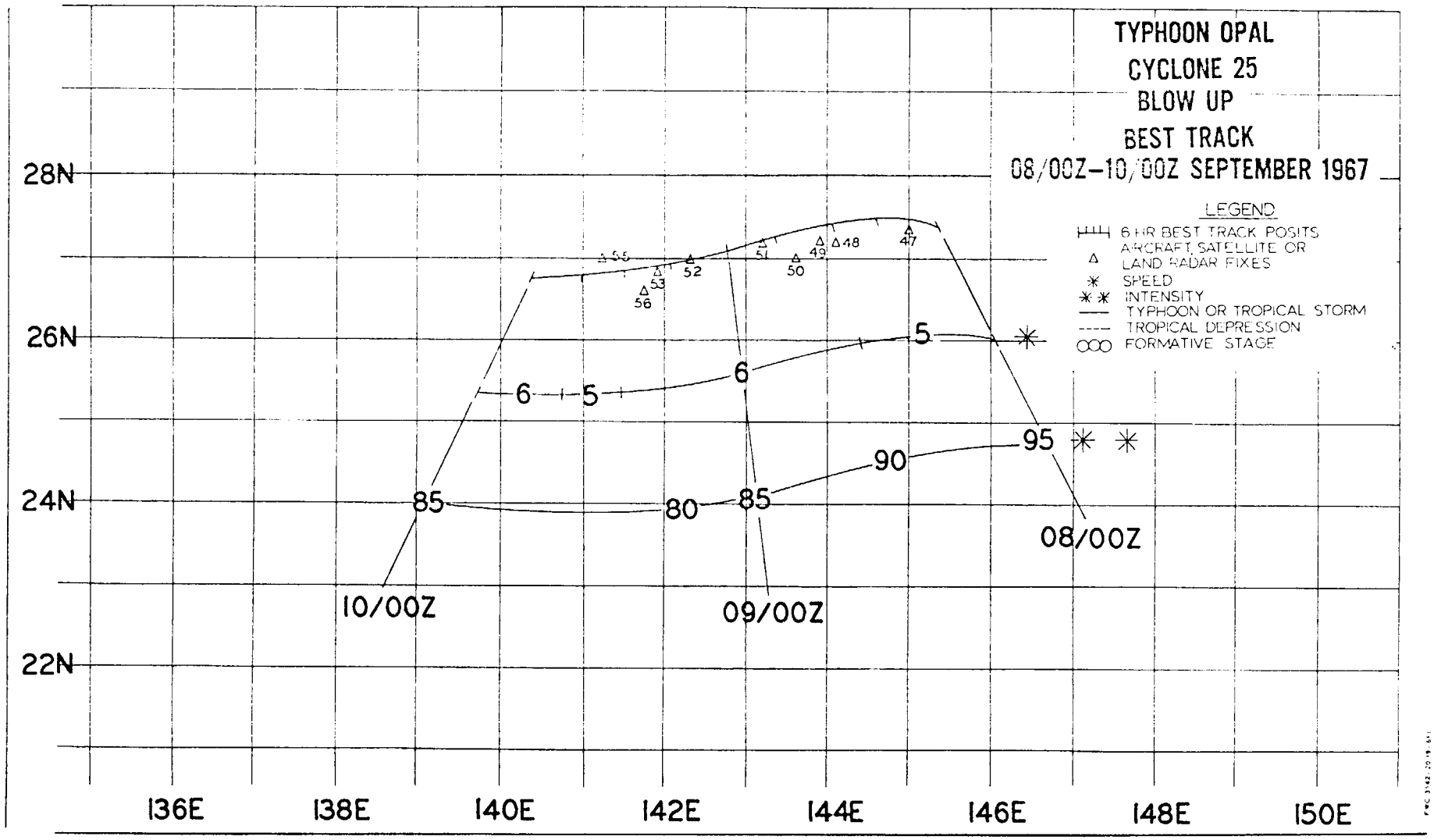
01/00Z
31/00Z
30/06Z
28/12Z


TYPHOON OPAL
CYCLONE 25
BLOW UP
BEST TRACK
08/00Z–10/00Z SEPTEMBER 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
28N
26N
24N
22N
136E
138E
140E
142E
144E
146E
148E
150E
10/00Z
09/00Z
08/00Z
85
80
85
90
95
6
5
6
5
56
53
52
51
50
49
48
47

EYE FIXES CYCLONE 25

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	EYE FORM	ORIEN-TATION	EYE DIA	THKNS WALL CLOUD
1	300404Z	16.3N 168.7E	54-P-P03	700MB	042	050	992	3075	12/--	CIRC	----	08	15
2	302135Z	17.2N 168.2E	54-P-P02	700MB	040	065	982	2960	16/--	CIRC	----	10	10
3	310320Z	17.5N 167.5E	SLTLS	STG X	DIA 02	BNDS 2							
4	310324Z	17.4N 167.9E	54-P-P03	700MB	068	070	975	2929	16/--	ELIP	NE-SW	15X02	10
5	310935Z	17.4N 167.7E	VW-P-P15	0240M	045	---	966	---	--/--	CIRC	----	30	09
6	311508Z	17.8N 167.0E	VW-R-P10	0480M	046	---	---	---	--/--	CIRC	----	18	08
7	312200Z	18.3N 166.6E	54-P-P01	700MB	060	065	976	2911	21/--	CIRC	----	20	10
8	010347Z	18.2N 166.0E	54-P-P01	700MB	053	060	986	2926	16/--	CIRC	----	40	05
9	011000Z	18.5N 165.3E	VW-P-P03	700MB	070	---	949	2908	16/10	CIRC	----	30	--
10	011500Z	18.6N 164.8E	VW-R-P--	700MB	---	---	---	---	--/--	----			--
11	011600Z	18.8N 164.5E	VW-P-P01	700MB	078	---	972	2832	15/--	CIRC	----	25	--
12	020110Z	19.0N 162.0E	SLTLS	STG X	DIA 04	BNDS 4							
13	020150Z	18.6N 162.9E	54-P-P03	700MB	080	075	975	2899	19/--	ELIP	NE-SW	25X20	--
14	020350Z	19.0N 162.8E	54-P-P03	700MB	093	075	976	2908	17/--	CIRC	----	20	--
15	021003Z	19.0N 161.9E	VW-P-P01	700MB	---	---	932	2502	18/--	CIRC	----	15	--
16	021545Z	19.2N 161.5E	VW-P-P05	700MB	---	---	935	2451	20/--	ELIP	NW-SE	18X15	05
17	022205Z	19.5N 160.6E	54-P-P02	700MB	120	100	936	2810	18/--	CIRC	----	20	03
18	030114Z	20.6N 159.7E	SLTLS	STG X	DIA 05	BNDS 4							
19	030347Z	19.9N 159.8E	54-P-P02	700MB	110	120	919	2306	20/--	CIRC	----	16	04
20	030950Z	20.3N 158.8E	VW-P-P03	700MB	100	---	824	2334	21/--	CIRC	----	18	03
21	031535Z	20.6N 157.4E	VW-P-P05	700MB	150	---	752	2331	21/--	CONC		50-15	06
22	032200Z	20.6N 156.6E	54-P-P05	700MB	140	130	922	2402	18/--	CONC		40-15	--
23	040330Z	21.1N 155.6E	54-P-P05	700MB	118	080	919	2393	23/--	CIRC	----	35	--
24	041000Z	21.1N 154.5E	VW-R-P15	0870M	---	---	---	---	--/--	----			--

EYE FIXES CYCLONE 25

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	EYE FORM	ORIEN-TATION	EYE DIA	THKNS WALL CLOUD
25	041015Z	21.3N 154.4E	VW-R-P05	2890M	082	060	---	---	--/--	ELIP	NE-SW	38X33	07
26	041555Z	21.9N 153.4E	VW-P-P05	700MB	120	---	925	2460	19/--	ELIP	N-S	36X25	--
27	042207Z	22.3N 152.5E	54-P-P05	700MB	090	126	962	2758	20/--	ELIP	NE-SW	30X20	--
28	050350Z	22.7N 151.5E	54-P-P05	700MB	090	120	960	2774	20/--	CIRC	----	25	--
29	050430Z	23.0N 151.0E	SLTLS	STG X	DIA 05	BNDS 4							
30	051030Z	22.6N 150.0E	VW-R-F20	700MB	---	050	---	---	--/--	ELIP	N-S	75X40	--
31	051540Z	23.6N 150.0E	VW-R-F10	700MB	---	---	---	---	--/--	CIRC	----	35	04
32	052122Z	24.0N 148.9E	SLTLS	STG -	DIA --	BNDS -							
33	052230Z	24.5N 149.2E	54-R-P15	700MB	070	065	944	2594	16/--	ELIP	N-S	40X20	20
34	060242Z	24.5N 148.0E	SLTLS	STG X	DIA 05	BNDS 4							
35	060400Z	25.0N 148.9E	54-P-P01	700MB	100	075	940	2506	18/--	ELIP	NW-SE	40X20	--
36	060910Z	25.4N 148.3E	VW-R-F15	0460M	---	---	---	---	--/--	----			--
37	060954Z	25.4N 148.2E	VW-R-P02	0340M	085	060	973	---	--/--	CIRC	----	10	10
38	061130Z	25.4N 148.2E	VW-P-P02	700MB	---	---	---	2640	--/--	----			--
39	061520Z	25.9N 148.0E	VW-P-P02	700MB	075	---	---	---	18/10	ELIP	NW-SE	35X25	--
40	062150Z	26.0N 147.6E	54-P-P05	700MB	055	070	949	2630	18/--	ELIP	NE-SW	40X20	--
41	070332Z	26.6N 146.6E	54-P-P05	700MB	075	065	945	2676	17/--	CIRC	----	30	--
42	070544Z	26.5N 146.0E	SLTLS	STG X	DIA 04	BNDS 3							
43	070930Z	26.9N 146.1E	VW-R-F15	0380M	---	---	---	---	--/--	----			--
44	071000Z	27.0N 146.4E	VW-R-P05	0350M	065	085	---	---	--/--	ELIP	NE-SW	26X18	--
45	071500Z	27.4N 146.4E	VW-R-P05	0370M	073	045	992	---	--/--	CIRC	----	20	--
46	072200Z	27.2N 145.5E	54-P-P02	700MB	060	---	955	2694	16/--	CIRC	----	20	--
47	080300Z	27.4N 145.0E	54-P-P02	700MB	080	055	955	2694	16/--	CIRC	----	20	--
48	081025Z	27.2N 144.1E	VW-P-P03	700MB	085	---	954	2740	14/12	CIRC	----	10	--

EYE FIXES CYCLONE 25

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	EYE FORM	ORIEN-TATION	EYE DIA	THKNS WALL CLOUD
49	081240Z	27.2N 143.9E	VW-R-P--		---	---	---	---	--/--	----			--
50	081530Z	27.0N 143.7E	VW-P-P03	700MB	035	---	948	2759	15/--	CIRC	----	10	--
51	082200Z	27.2N 143.2E	54-P-P02	700MB	065	045	965	2792	17/--	ELIP	NE-SW	20X15	--
52	090345Z	26.9N 142.3E	54-P-P02	700MB	070	050	965	2783	16/--	ELIP	NE-SW	20X15	--
53	090940Z	26.7N 141.9E	VW-R-P15		---	---	---	---	--/--	----			--
54	091000Z	26.9N 141.9E	VW-P-P03	700MB	080	055	965	2813	16/--	CIRC	----	20	--
55	091530Z	27.0N 141.3E	VW-P-P01	700MB	080	---	---	2788	18/--	ELIP	NE-SW	20X15	--
56	092200Z	26.6N 140.7E	54-P-P01	700MB	069	045	966	2792	16/--	CIRC	----	30	--
57	100322Z	26.5N 139.8E	54-P-P02	700MB	069	055	966	2786	13/--	CIRC	----	30	--
58	100404Z	26.5N 139.0E	SLTLS	STG X	DIA 06	BNDS 3							
59	100950Z	26.5N 139.3E	VW-P-P02	700MB	075	075	978	2808	15/09	ELIP	NW-SE	25X20	--
60	101533Z	26.7N 138.3E	VW-P-P03	700MB	060	---	974	2836	13/08	ELIP	NW-SE	35X25	--
61	102100Z	26.8N 138.0E	54-P-P02	700MB	060	---	965	2777	16/--	CIRC	----	20	--
62	110235Z	27.2N 137.0E	54-P-P02	700MB	075	045	963	2783	17/--	ELIP	N-S	20X15	20
63	110304Z	27.5N 136.0E	SLTLS	STG X	DIA 05	BNDS 4							
64	111030Z	27.6N 136.7E	VW-P-P03	700MB	080	065	968	2707	16/--	ELIP	N-S	25X20	--
65	111510Z	27.7N 136.6E	VW-P-P02	700MB	075	---	---	2789	16/--	ELIP	NE-SW	25X20	--
66	112207Z	28.3N 136.1E	54-P-P03	700MB	040	040	959	2737	17/--	ELIP	NE-SW	15X08	--
67	120323Z	28.3N 135.7E	54-P-P03	700MB	---	050	959	2746	16/--	ELIP	NE-SW	15X08	--
68	120658Z	28.5N 135.5E	SLTLS	STG X	DIA 05	BNDS 3							
69	120920Z	28.7N 136.1E	VW-P-P05	1200M	055	065	973	---	--/--	CIRC	----	20	--
70	121520Z	29.4N 136.3E	VW-R-F05	700MB	055	---	---	---	--/--	CIRC	----	30	--
71	122332Z	29.8N 137.9E	54-P-P03	700MB	051	040	964	2792	17/--	----			--
72	130323Z	29.8N 138.6E	54-P-P03	700MB	070	040	962	2749	17/--	ELIP	NE-SW	25X05	--

EYE FIXES CYCLONE 25

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	EYE FORM	ORIEN-TATION	EYE DIA	THKNS WALL CLOUD
73	130250Z	30.0N 138.5E	SLTLS	STG X	DIA 05	BNDS 3							
74	130800Z	30.3N 139.8E	LND RDR		---	---	---	---	--/--	----			--
75	130900Z	30.7N 140.1E	LND RDR		---	---	---	---	--/--	----			--
76	130956Z	31.1N 139.5E	VW-P-P01	0550M	080	075	961	---	--/--	----			F.B.
77	131000Z	30.9N 140.3E	LND RDR		---	---	---	---	--/--	----			--
78	131100Z	31.0N 140.6E	LND RDR		---	---	---	---	--/--	----			--
79	131311Z	31.4N 139.9E	VW-R-F--		---	---	---	---	--/--	----			--
80	131530Z	31.6N 140.0E	VW-P-P02	1370M	086	050	963	---	--/--	CIRC	----	05	--
81	131700Z	32.0N 140.6E	LND RDR		---	---	---	---	--/--	----			--
82	131800Z	32.1N 140.8E	LND RDR		---	---	---	---	--/--	----			--
83	132144Z	32.2N 141.3E	54-P-P03	700MB	075	060	964	2786	17/--	CIRC	----	40	03
84	140300Z	33.1N 142.1E	LND RDR		---	---	---	---	--/--	----			--
85	140348Z	33.1N 141.8E	54-P-F03	700MB	070	080	968	2822	17/--	----			F.B.
86	140914Z	33.5N 142.1E	VW-P-P02	0260M	080	070	970	---	--/--	CIRC	----	20	--
87	141525Z	34.1N 142.5E	VW-P-P02	1220M	050	---	972	---	--/--	----			F.B.
88	142245Z	33.0N 145.0E	SLTLS	STG -	DIA --	BNDS -							
89	150206Z	33.3N 141.8E	54-P-P03	700MB	065	035	974	2859	17/--	----			N.F.B.
90	150630Z	33.6N 142.8E	VW-R-L--	700MB	---	---	---	---	--/--	----			--
91	152216Z	35.1N 143.3E	54-P-P02	700MB	030	045	976	2899	18/--	----			--
92	160300Z	35.9N 144.1E	54-P-P02	700MB	035	050	976	2911	20/--	----			--

TROPICAL CYCLONE 25 -- 08/30/0600Z TO 09/14/1200Z

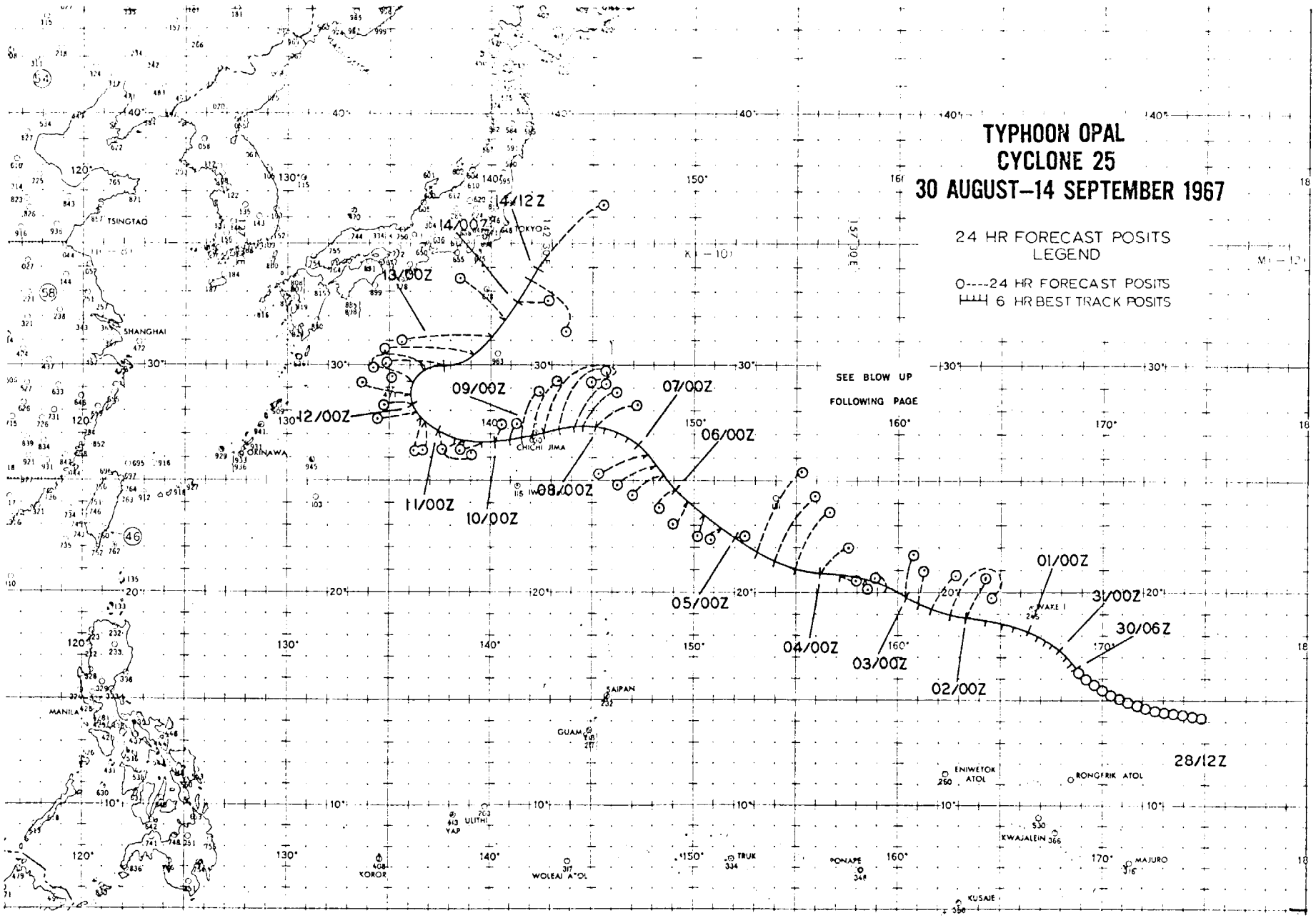
POSITION AND FORECAST VERIFICATION DATA

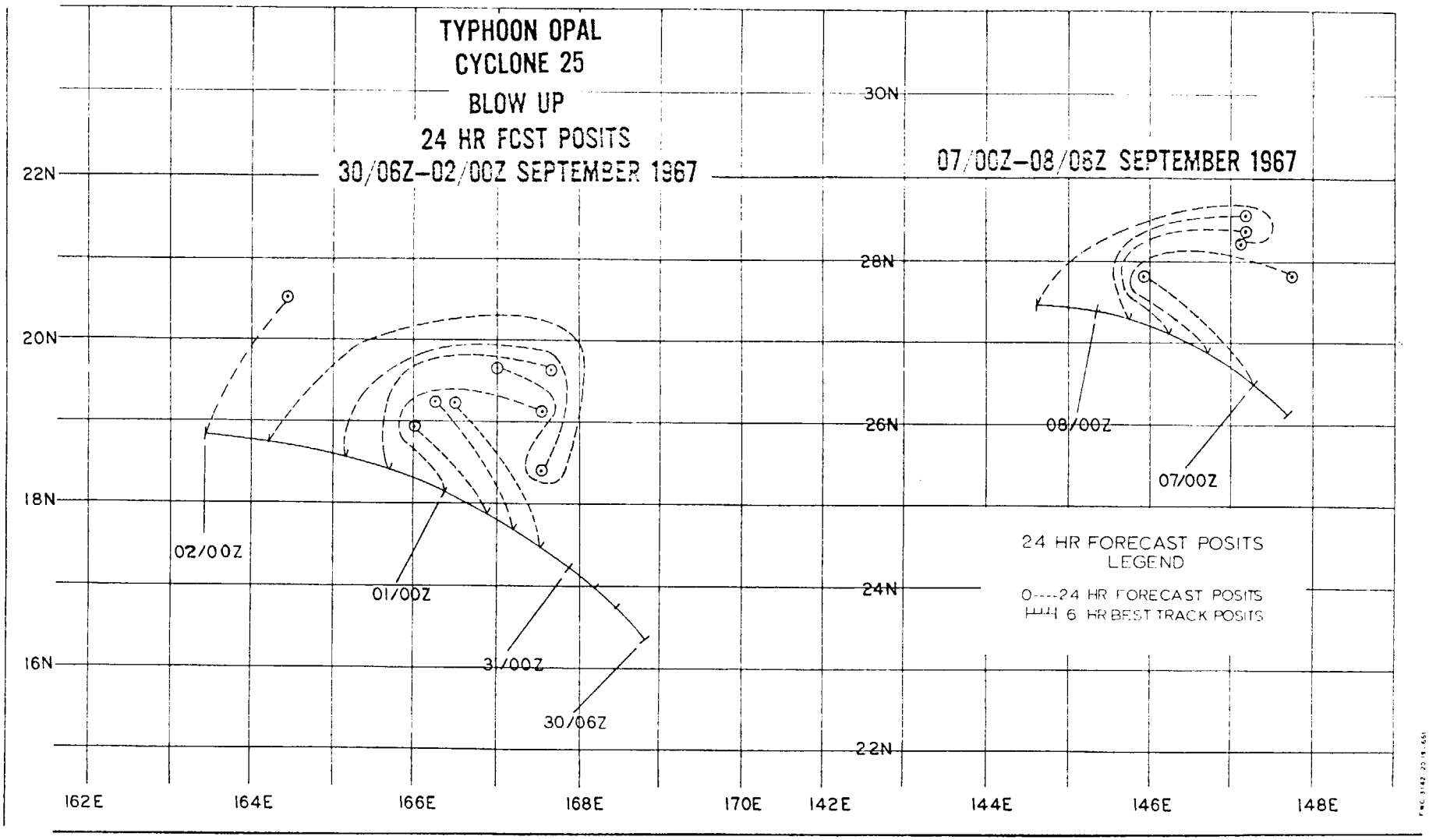
DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DIST.	48 HR. ERROR DEG. DIST.	72 HR. ERROR DEG. DIST.
300600Z	16.4N	168.8E	--------	--------	--------
301200Z	16.7N	168.5E	--------	--------	--------
301800Z	17.0N	168.2E	--------	--------	--------
310000Z	17.3N	167.9E	--------	--------	--------
310600Z	17.5N	167.6E	329-0114	--------	--------
311200Z	17.7N	167.3E	309-0138	--------	--------
311800Z	17.9N	166.9E	290-0168	--------	--------
010000Z	18.2N	166.4E	049-0078	--------	--------
010600Z	18.4N	165.7E	057-0126	330-0264	--------
011200Z	18.6N	165.1E	095-0132	332-0258	--------
011800Z	18.7N	164.2E	071-0162	333-0252	--------
020000Z	18.8N	163.4E	028-0114	050-0312	--------
020600Z	18.9N	162.5E	067-0114	052-0354	339-0462
021200Z	19.1N	161.7E	037-0108	067-0378	--------
021800Z	19.4N	161.0E	008-0096	059-0390	028-0480
030000Z	19.7N	160.3E	009-0114	027-0300	--------
030600Z	20.2N	159.3E	314-0024	054-0240	050-0600
031200Z	20.5N	158.3E	153-0024	038-0216	--------
031800Z	20.7N	157.1E	102-0054	024-0234	057-0654
040000Z	20.8N	156.1E	048-0102	022-0336	--------
040600Z	21.1N	155.0E	031-0162	024-0174	052-0516
041200Z	21.5N	154.0E	033-0198	048-0168	--------
041800Z	21.9N	153.1E	030-0228	052-0174	037-0510
050000Z	22.4N	152.0E	104-0024	048-0282	--------
050600Z	22.8N	151.2E	192-0030	037-0408	040-0366
051200Z	23.3N	150.3E	188-0048	041-0480	--------
051800Z	24.0N	149.6E	207-0066	046-0480	053-0342
060000Z	24.7N	149.0E	218-0066	068-0246	--------
060600Z	25.2N	148.6E	238-0096	219-0144	050-0720
061200Z	25.7N	148.2E	241-0120	223-0174	--------
061800Z	26.1N	147.7E	246-0126	233-0192	055-0804
070000Z	26.5N	147.2E	317-0096	246-0168	--------
070600Z	26.8N	146.7E	042-0072	254-0204	236-0258
071200Z	27.1N	146.3E	[illegible]84	257-0234	--------

TROPICAL CYCLONE 25 -- 08/30/0600Z TO 09/14/1200Z
POSITION AND FORECAST VERIFICATION DATA (CONT)

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DIST.	48 HR. ERROR DEG. DIST.	72 HR. ERROR DEG. DIST.
071800Z	27.3N	145.8E	046-0096	269-0216	245-0300
080000Z	27.3N	145.3E	051-0108	338-0246	--------
080600Z	27.4N	144.5E	045-0114	043-0216	269-0300
081200Z	27.3N	144.1E	038-0132	038-0252	--------
081800Z	27.2N	143.4E	043-0186	041-0288	296-0300
090000Z	27.1N	142.8E	041-0174	047-0300	--------
090600Z	26.9N	142.1E	023-0156	041-0342	038-0534
091200Z	26.8N	141.5E	022-0126	040-0366	--------
091800Z	26.8N	141.0E	027-0036	041-0408	039-0582
100000Z	26.6N	140.4E	015-0048	042-0372	--------
100600Z	26.5N	139.6E	260-0066	028-0306	044-0570
101200Z	26.6N	138.8E	146-0018	030-0276	--------
101800Z	26.8N	138.1E	046-0012	038-0156	049-0726
110000Z	27.1N	137.4E	156-0042	360-0030	--------
110600Z	27.4N	136.8E	180-0060	242-0174	046-0534
111200Z	27.7N	136.6E	185-0078	210-0108	--------
111800Z	27.9N	136.3E	260-0096	236-0090	048-0264
120000Z	28.3N	136.1E	259-0060	201-0120	--------
120600Z	28.6N	136.0E	287-0114	218-0156	246-0378
121200Z	29.2N	136.2E	289-0108	230-0234	--------
121800Z	29.8N	136.8E	258-0084	253-0294	246-0372
130000Z	29.9N	137.9E	272-0156	264-0306	--------
130600Z	30.4N	139.1E	269-0222	286-0336	243-0480
131200Z	31.2N	140.0E	266-0228	275-0360	--------
131800Z	31.9N	140.7E	308-0150	265-0324	256-0630
140000Z	32.7N	141.5E	095-0066	278-0294	--------
140600Z	33.4N	142.0E	144-0150	282-0282	306-0252
141200Z	33.9N	142.4E	046-0210	278-0246	--------

AVERAGE 24 HOUR ERROR - 0106 MI.
AVERAGE 48 HOUR ERROR - 0262 MI.
AVERAGE 72 HOUR ERROR - 0477 MI.


TYPHOON OPAL
CYCLONE 25
30 AUGUST–14 SEPTEMBER 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
SEE BLOW UP
FOLLOWING PAGE
14/12Z
14/00Z
13/00Z
12/00Z
11/00Z
10/00Z
09/00Z
08/00Z
07/00Z
06/00Z
05/00Z
04/00Z
03/00Z
02/00Z
01/00Z
31/00Z
30/06Z
28/12Z
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO
WAKE I
MANILA
SAIPAN
GUAM
ULITHI
YAP
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO


TYPHOON OPAL
CYCLONE 25
BLOW UP
24 HR FCST POSITS
30/06Z–02/00Z SEPTEMBER 1967
07/00Z–08/06Z SEPTEMBER 1967
22N
20N
18N
16N
30N
28N
26N
24N
22N
162E
164E
166E
168E
170E
142E
144E
146E
148E
02/00Z
01/00Z
31/00Z
30/06Z
08/00Z
07/00Z
24 HR FORECAST POSITS
LEGEND
0----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS