The statistics, fix data and verification pages for each typhoon have been automated and are identified by cyclone number.

For convenience a list of cyclone numbers versus typhoon names follows:

CYCLONE	NAME
02	SALLY
04	VIOLET
06	ANITA
07	BILLIE
08	CLARA
12	ELLEN
21	KATE
22	MARGE
24	NORA
25	OPAL
27	RUTH
28	SARAH
31	WANDA
32	AMY
35	CARLA
36	DINAH
37	EMMA
38	FREDA
39	GILDA
40	HARRIET

See Appendix A for definitions or clarification of certain words and phrases that appear in this chapter.

TROPICAL CYCLONE 02 - 03/01/1800Z TO 03/07/0000Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 22
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 09
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 1374 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 971MBS AT 020230Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2893M. AT 012330Z
3. MAXIMUM SURFACE WIND - 085 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 180 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - FRACTURE OF A POLAR TROUGH AND AN EASTERLY WAVE

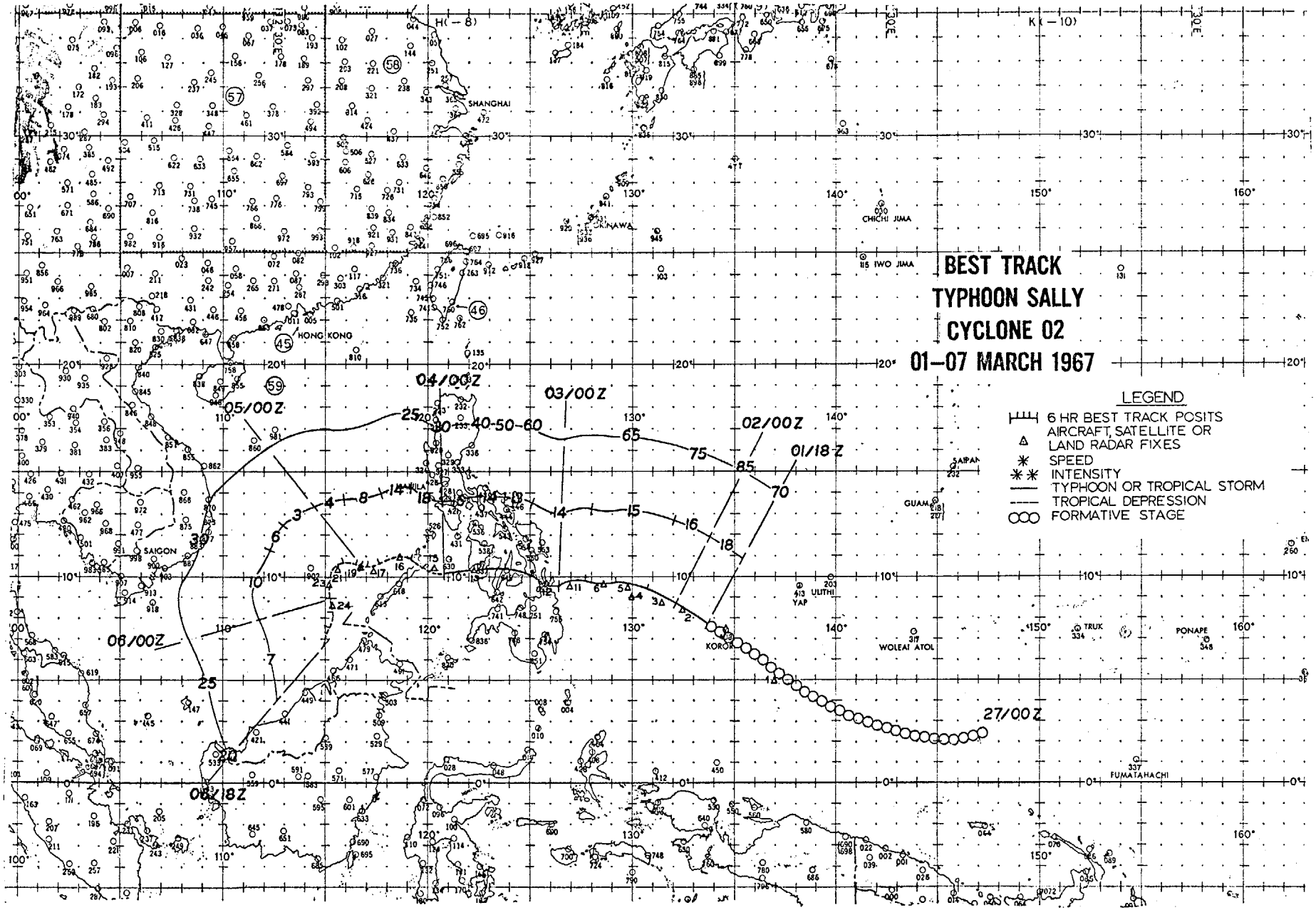
B. INITIAL SURFACE VORTEX

1. EMBEDDED VORTEX AT 270000Z
2. SURFACE PRESSURE LESS THAN 1006MB

C. 200MB FLOW ABOVE SURFACE VORTEX

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

III. FINAL DISPOSITION - DISSIPATED OVER WATER


BEST TRACK
TYPHOON SALLY
CYCLONE 02
01–07 MARCH 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
SHANGHAI
HONG KONG
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
SAIGON
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
FUMATAHACHI
01/18Z
02/00Z
03/00Z
04/00Z
05/00Z
06/00Z
06/18Z
27/00Z

EYE FIXES CYCLONE 02

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	010412Z	05.0N 137.0E	SLTLS	STG X	DIA 02	BNDS 1							
2	012330Z	08.6N 132.2E	54-P-P05	3220M	070	075	983	2893	09/--	CIRC	----	20	08
3	020230Z	08.9N 131.5E	54-P-P05	3200M	085	100	971	2902	09/--	CIRC	----	12	08
4	020508Z	09.0N 130.0E	SLTLS	STG X	DIA --	BNDS 2							
5	020901Z	09.5N 130.1E	VW-UNK10		---	---	---	---	--/--	----			--
6	020925Z	09.6N 129.9E	VW-R-P05	0500M	---	025	011	---	--/--	ELIP	NW-SE	26X17	F.B.
7	021130Z	09.8N 128.6E	VW-UNK--	0500M	---	---	---	---	--/--	CIRC	----	20	--
8	021300Z	09.7N 128.9E	VW-UNK--		---	---	---	---	--/--	CIRC	----	20	--
9	021400Z	09.8N 128.8E	VW-UNK--		---	---	---	---	--/--	----			--
10	021500Z	09.9N 128.6E	VW-R-P05	0490M	047	015	009	---	--/--	CIRC	----	11	08
11	022221Z	09.5N 127.0E	54-P-P03	3290M	075	065	988	2993	16/--	CIRC	----	12	05
12	030317Z	09.9N 125.8E	54-P-F01	5250M	060	065	986	---	--/--	----			--
13	030556Z	10.0N 125.0E	SLTLS	STG X	DIA 05	BNDS 3							
14	030840Z	--.-N 1--.-E	54-UNK--	4810M	---	---	---	---	--/--	----			--
15	031450Z	--.-N 1--.-E	VW-UNK--	700MB	056	---	---	---	--/--	----			--
16	031905Z	10.3N 122.2E	VW-R-P05	700MB	---	---	---	---	--/--	----			--
17	032055Z	10.2N 122.0E	VW-P-P02	700MB	060	---	990	---	--/--	CIRC	----	15	08
18	040314Z	10.4N 120.3E	54-R-P01	5820M	025	---	998	---	--/--	CIRC	----	08	01
19	040900Z	10.9N 118.6E	54-P-P01	500MB	025	---	008	3112	09/07	----			F.B.
20	041445Z	10.3N 117.2E	VW-R-F05	0280M	024	---	004	---	--/--	----			F.B.
21	050330Z	10.5N 116.7E	54-P-F03	700MB	025	015	004	---	--/--	CIRC	----	30	--
22	050800Z	10.8N 116.4E	54-P-P03	0460M	015	020	999	---	--/--	----			--
23	051447Z	10.4N 115.6E	VW-P-P02	0440M	030	---	007	3150	09/05	CIRC	----	10	--
24	051750Z	10.0N 115.2E	VW-UNK--	0220M	---	---	004	---	--/--	CIRC	----	10	--

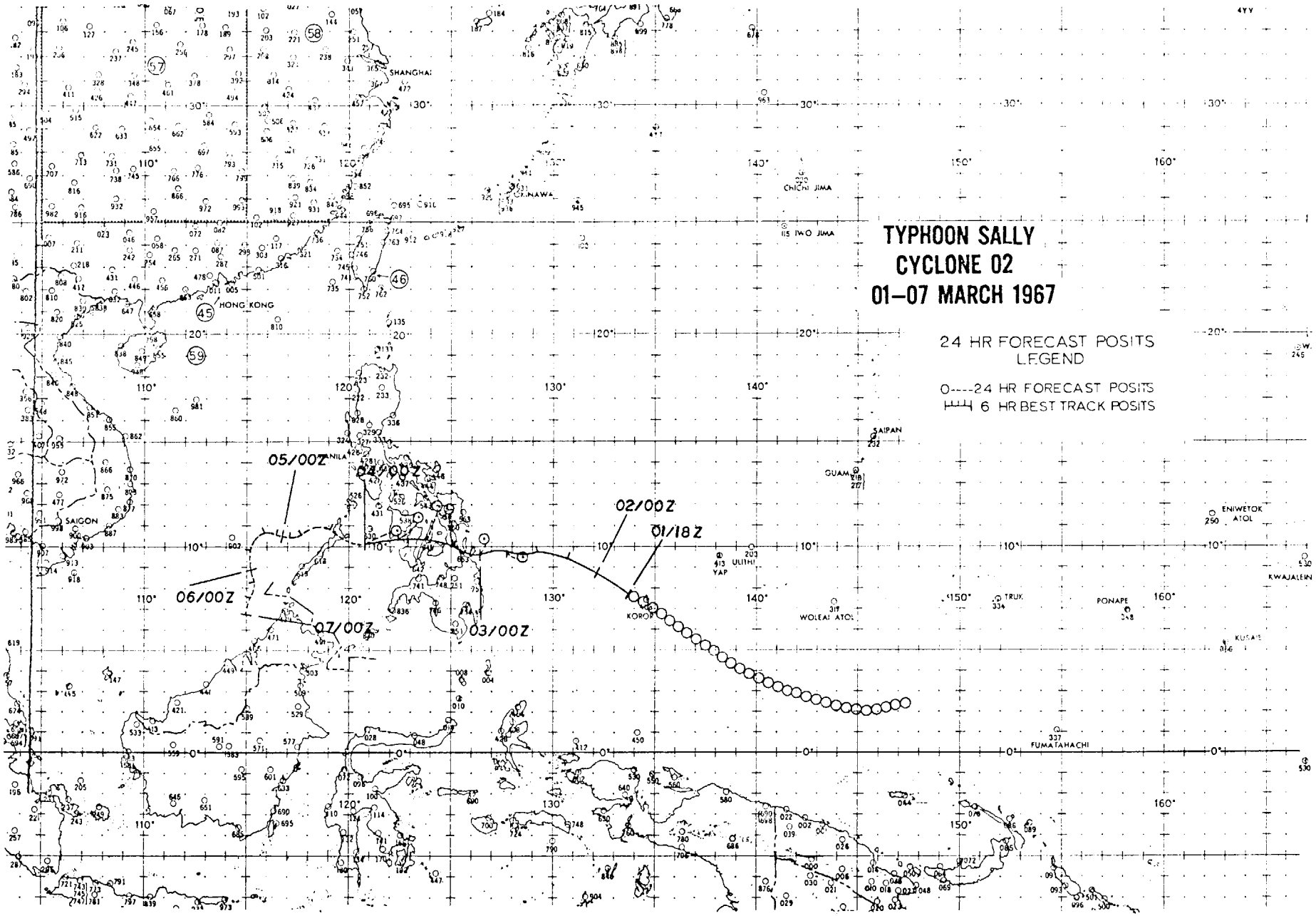
EYE FIXES CYCLONE 02

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	0521002	09.8N 115.1E	VW-P-L04	0440M	025	---	002	---	--/--	----			--
26	0603222	08.6N 115.3E	54-P-P03	0450M	040	030	007	---	--/--	----			--
27	0703302	--.-N 1--.-E	54-UNK--	0150M	---	---	---	---	--/--	----			--

TROPICAL CYCLONE 02 -- 03/01/1800Z TO 03/06/1800Z
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.
011800Z	07.7N	133.6E	--------	--------	--------
020000Z	08.6N	132.1E	--------	--------	--------
020600Z	09.4N	130.7E	--------	--------	--------
021200Z	09.6N	129.2E	--------	--------	--------
021800Z	09.8N	127.8E	116-0036	--------	--------
030000Z	09.5N	126.4E	015-0048	--------	--------
030600Z	10.1N	125.1E	356-0108	--------	--------
031200Z	10.3N	123.8E	020-0108	--------	--------
031800Z	10.3N	122.4E	039-0072	031-0078	--------

AVERAGE 24 HOUR ERROR - 0074 MI.
AVERAGE 48 HOUR ERROR - 0078 MI.
AVERAGE 72 HOUR ERROR - ---- MI.


TYPHOON SALLY
CYCLONE 02
01–07 MARCH 1967
24 HR FORECAST POSITS
LEGEND
0----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
01/18Z
02/00Z
03/00Z
04/00Z
05/00Z
06/00Z
07/00Z
SHANGHAI
HONG KONG
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
ULITHI
YAP
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
KWAJALEIN
FUMATAHACHI
SAIGON
MANILA

TROPICAL CYCLONE 04 - 04/01/0600Z TO 04/12/0600Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 45
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 32
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 2688 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 929MBS AT 060825Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2460M. AT 060825Z
3. MAXIMUM SURFACE WIND - 120 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 450 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - FRACTURE OF A POLAR TROUGH AND AN EASTERLY WAVE

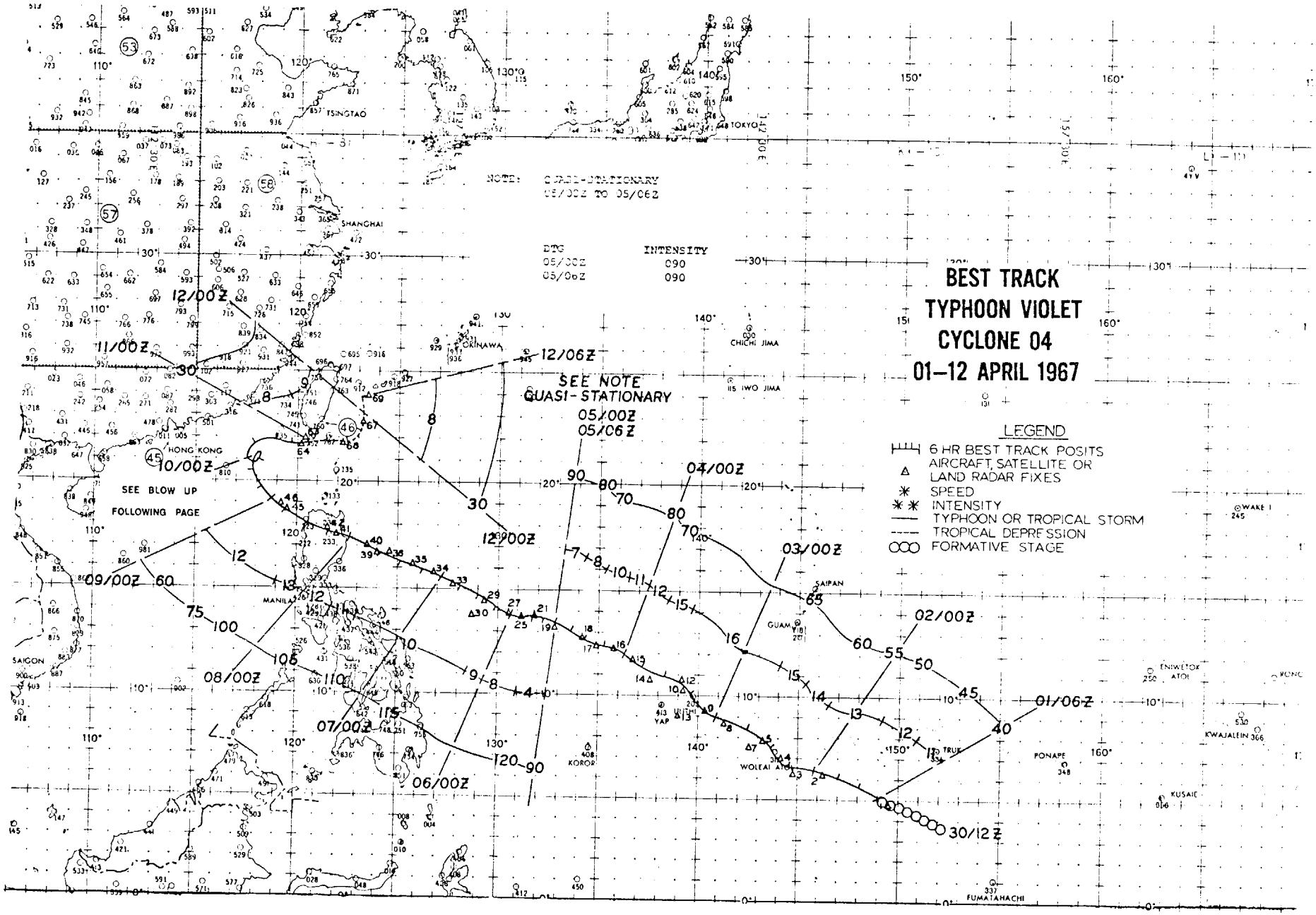
B. INITIAL SURFACE VORTEX

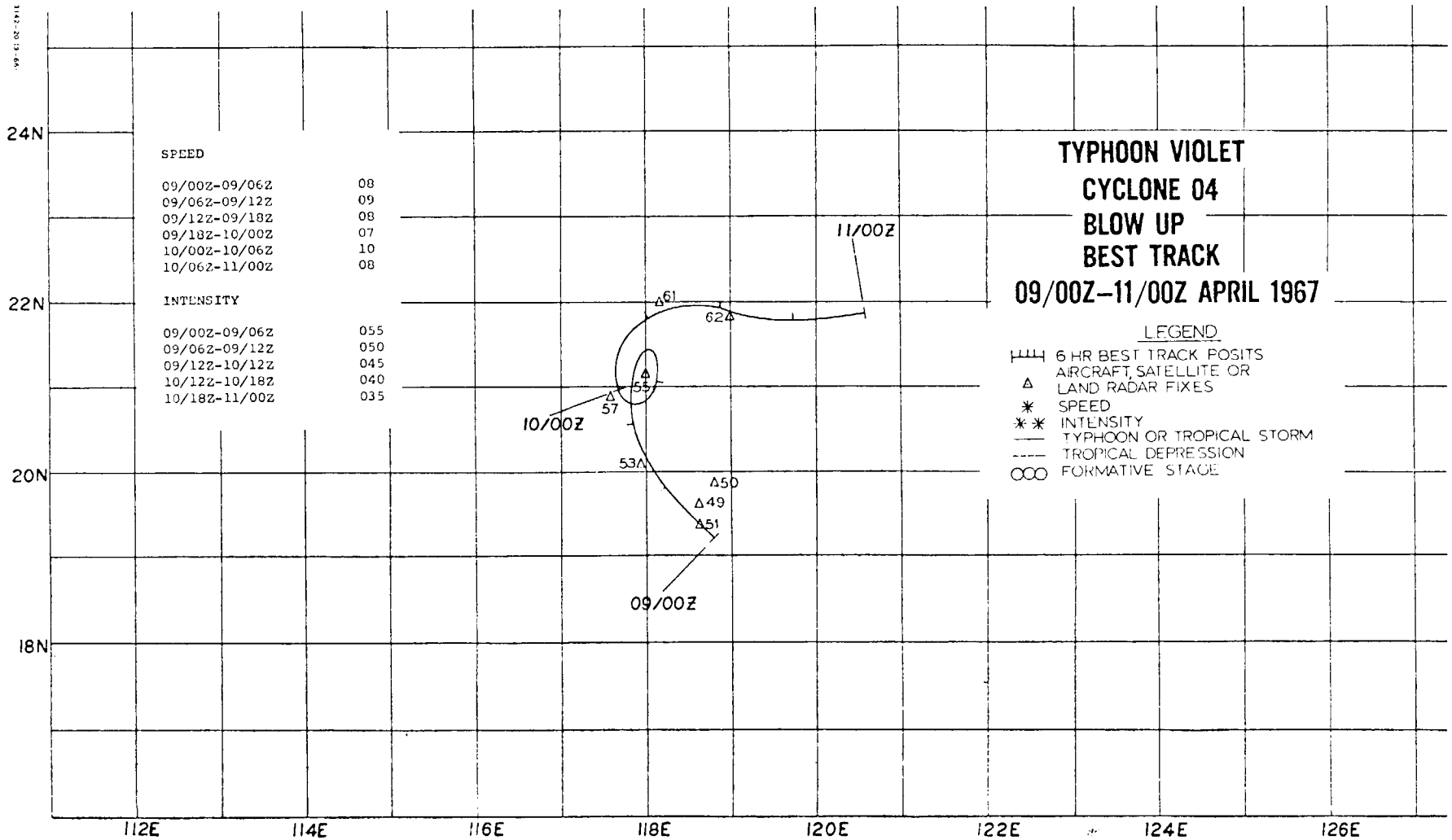
1. INDUCED VORTEX AT 301200Z
2. SURFACE PRESSURE LESS THAN 1004MB

C. 200MB FLOW ABOVE SURFACE VORTEX

1. INITIAL - FAST
2. UPON REACHING TYPHOON INTENSITY - EAST

III. FINAL DISPOSITION - DISSIPATED OVER WATER


BEST TRACK
TYPHOON VIOLET
CYCLONE 04
01–12 APRIL 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
DTG
INTENSITY
05/00Z 090
05/06Z 090
SEE NOTE
QUASI-STATIONARY
05/00Z
05/06Z
SEE BLOW UP
FOLLOWING PAGE
TSINGTAO
SHANGHAI
OKINAWA
TOKYO
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
YAP
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
KWAJALEIN
ENIWETOK ATOL
WAKE I
FUMATAHACHI
01/06Z
02/00Z
03/00Z
04/00Z
06/00Z
07/00Z
08/00Z
09/00Z
10/00Z
11/00Z
12/00Z
12/06Z
30/12Z


TYPHOON VIOLET
CYCLONE 04
BLOW UP
BEST TRACK
09/00Z–11/00Z APRIL 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
SPEED
09/00Z-09/06Z 08
09/06Z-09/12Z 09
09/12Z-09/18Z 08
09/18Z-10/00Z 07
10/00Z-10/06Z 10
10/06Z-11/00Z 08
INTENSITY
09/00Z-09/06Z 055
09/06Z-09/12Z 050
09/12Z-10/12Z 045
10/12Z-10/18Z 040
10/18Z-11/00Z 035
11/00Z
10/00Z
09/00Z
61
62
55
57
53
50
49
51
24N
22N
20N
18N
112E
114E
116E
118E
120E
122E
124E
126E

EYE FIXES CYCLONE 04

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	0103107	04.9N 149.5E	54-P-F10	0460M	035	035	000	3066	07/--	----			F.B.
2	0121257	06.3N 146.3E	54-P-P05	700MB	035	035	995	---	--/--	CIRC	----	30	10
3	0203007	06.3N 144.9E	54-P-P05	0460M	050	050	986	---	--/--	CIRC	----	25	--
4	020615Z	07.5N 142.5E	SLTLS	STG X	DIA 05	BNDS 2							
5	020830Z	07.0N 144.3E	VW-P-P--	0300M	045	045	990	3048	15/07	CIRC	----	12	--
6	021330Z	07.8N 143.2E	VW-R-P05	700MB	---	---	---	---	--/--	----			--
7	021430Z	07.9N 143.0E	VW-P-P05	700MB	---	---	992	3002	14/08	CIRC	----	16	--
8	022200Z	08.6N 141.3E	54-P-P05	700MB	060	075	991	2978	11/--	CIRC	----	30	--
9	030200Z	09.2N 140.4E	54-P-P03	3310M	055	060	982	2972	10/--	CIRC	----	25	--
10	030310Z	09.0N 139.0E	SLTLS	STG C	DIA --	BNDS -							
11	030750Z	10.3N 139.2E	VW-UNK10		---	---	---	---	--/--	----			--
12	030900Z	10.3N 139.5E	VW-P-P05	0310M	065	065	988	---	--/--	CIRC	----	25	08
13	031230Z	10.9N 138.3E	VW-UNK20		---	---	---	---	--/--	----			--
14	031441Z	10.7N 137.6E	VW-P-P05	700MB	050	---	---	---	--/--	----			F.B.
15	032044Z	11.6N 136.8E	54-P-P02	700MB	045	---	975	2874	17/--	CIRC	----	10	08
16	040300Z	12.2N 135.7E	54-P-P03	3300M	065	050	977	2880	10/--	CIRC	----	10	--
17	040312Z	12.0N 135.0E	SLTLS	STG X	DIA 04	BNDS 4							
18	040816Z	12.4N 134.9E	54-P-P05	3110M	065	075	969	2804	14/--	CIRC	----	05	40
19	041445Z	12.8N 134.1E	VW-P-P07	0460M	---	065	967	---	--/--	ELIP	N-S	10X06	--
20	042040Z	13.2N 132.9E	VW-P-P05	700MB	---	050	974	2841	12/06	ELIP	N-S	23X12	--
21	050300Z	13.2N 133.0E	54-P-P02	3320M	080	050	978	2920	15/--	CIRC	----	30	05
22	050352Z	13.8N 131.8E	ACFT RDR		---	---	---	---	--/--	----			--
23	050503Z	13.0N 132.5E	SLTLS	STG X	DIA 05	BNDS 4							
24	050900Z	13.2N 132.7E	54-P-P02	700MB	095	100	942	2600	20/--	CIRC	----	30	05

EYE FIXES CYCLONE 04

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	051250Z	14.0N 132.5E	ACFT RDR		---	---	---	---	--/--	----			--
26	051500Z	13.6N 132.1E	VW-P-P03	700MB	050	---	932	2502	21/12	CIRC	----	25	05
27	051930Z	13.7N 131.2E	VW-R-P--		---	---	---	---	--/--	----			--
28	052107Z	13.7N 131.0E	VW-P-P02	700MB	080	070	977	2877	21/12	ELIP	NW-SE	26X17	04
29	060130Z	13.9N 130.6E	54-UNK--	500MB	---	---	---	---	--/--	----			--
30	060330Z	14.1N 130.3E	54-P-P05	700MB	105	095	931	2472	20/--	ELIP	NW-SE	35X25	05
31	060825Z	14.5N 129.3E	54-P-P12	700MB	115	100	929	2460	18/--	CIRC	----	25	05
32	061348Z	14.7N 128.8E	VW-UNK--		---	---	---	---	--/--	----			--
33	061500Z	14.9N 128.8E	VW-P-P02	2200M	060	---	940	2575	--/--	CIRC	----	22	04
34	062100Z	15.3N 127.7E	VW-P-P03	2440M	110	---	940	2572	17/13	CIRC	----	23	04
35	070300Z	15.8N 126.8E	54-P-P02	2820M	050	100	947	2618	17/--	CIRC	----	25	05
36	070900Z	16.1N 125.8E	54-P-P02	700MB	075	050	948	2624	14/--	CIRC	----	20	05
37	071129Z	16.3N 126.0E	ACFT RDR		---	---	---	---	--/--	----			--
38	071519Z	16.7N 124.6E	VW-P-P02	2480M	080	---	954	2705	17/11	CIRC	----	25	05
39	071730Z	16.8N 124.0E	VW-UNK--		---	---	---	---	--/--	----			--
40	072109Z	17.1N 123.5E	VW-P-P02	700MB	090	---	958	2723	16/10	CONC		60-25	05
41	080330Z	17.5N 122.0E	54-R-L05	700MB	085	100	---	---	--/--	CIRC	----	30	--
42	080700Z	17.8N 121.5E	54-R-P--		---	---	---	---	--/--	----			--
43	080835Z	17.7N 121.3E	54-R-L05	3300M	---	---	---	---	--/--	CIRC	----	25	--
44	081512Z	18.6N 119.6E	VW-P-P02	700MB	070	---	993	2995	12/05	CIRC	----	40	05
45	082109Z	19.0N 119.3E	VW-P-P02	0270M	055	045	991	---	--/--	CIRC	----	80	--
46	082250Z	18.9N 119.1E	LND RDR		---	---	---	---	--/--	----			--
47	090000Z	19.3N 118.8E	LND RDR		---	---	---	---	--/--	----			--
48	090100Z	19.5N 118.6E	LND RDR		---	---	---	---	--/--	----			--

EYE FIXES CYCLONE 04

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	090200Z	19.8N 118.8E	LND RDR		---	---	---	---	--/--	----			--
50	090300Z	19.4N 118.5E	54-P-P03	700MB	050	050	991	2987	12/--	CIRC	----	25	--
51	090300Z	19.6N 118.8E	LND RDR		---	---	---	---	--/--	----			--
52	090439Z	19.5N 118.0E	SLTLS	STG X	DIA 05 BNDS 3								
53	090910Z	20.1N 117.9E	54-P-P03	3390M	060	050	993	3002	12/--	CIRC	----	30	--
54	091500Z	21.3N 118.0E	VW-P-F15	0350M	---	040	995	---	--/--	CIRC	----	85	--
55	091700Z	21.2N 111.8E	VW-UNK--		---	---	---	---	--/--	----			--
56	091800Z	21.1N 118.1E	VW-UNK--		---	---	---	---	--/--	----			--
57	091900Z	19.9N 118.0E	VW-UNK--		---	---	---	---	--/--	----			--
58	092127Z	20.8N 117.6E	VW-P-P05	700MB	053	---	998	3027	14/12	CIRC	----	40	--
59	100310Z	21.0N 117.8E	54-P-F10	700MB	050	060	994	3024	11/--	----			--
60	100820Z	22.0N 118.3E	54-P-F05	700MB	070	060	995	3024	12/--	----			F.B.
61	101520Z	21.7N 119.0E	VW-P-P02	0220M	045	050	997	---	--/--	CIRC	----	30	--
62	101930Z	22.0N 120.4E	VW-UNK--		---	---	---	---	--/--	----			--
63	102100Z	21.7N 120.1E	VW-P-P02	0220M	035	030	999	3060	12/--	----			--
64	110300Z	21.8N 120.8E	54-P-P01	700MB	025	025	009	3136	12/--	CIRC	----	10	--
65	110845Z	21.8N 121.7E	54-P-P02	700MB	---	025	000	3103	11/--	----			N.F.B.
66	111445Z	22.8N 123.3E	VW-P-F10	700MB	040	---	998	3182	12/11	----			--
67	111454Z	21.9N 123.3E	ACFT RDR		---	---	---	---	--/--	----			--
68	112117Z	23.9N 123.3E	VW-P-P02		---	030	011	---	--/--	----			N.F.B.

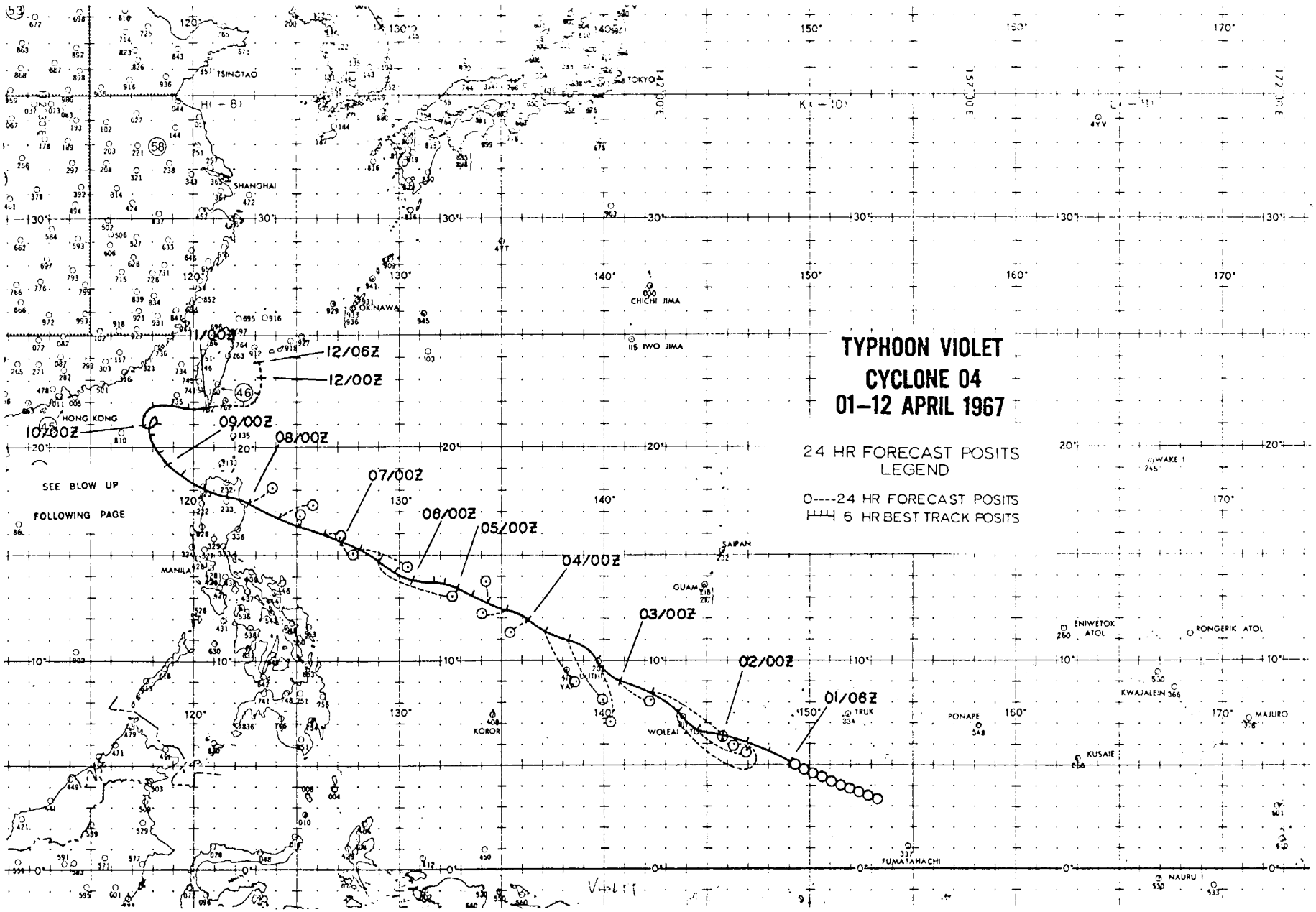
TROPICAL CYCLONE 04 -- 04/01/0600Z TO 04/12/0600Z
POSITION AND FORECAST VERIFICATION DATA

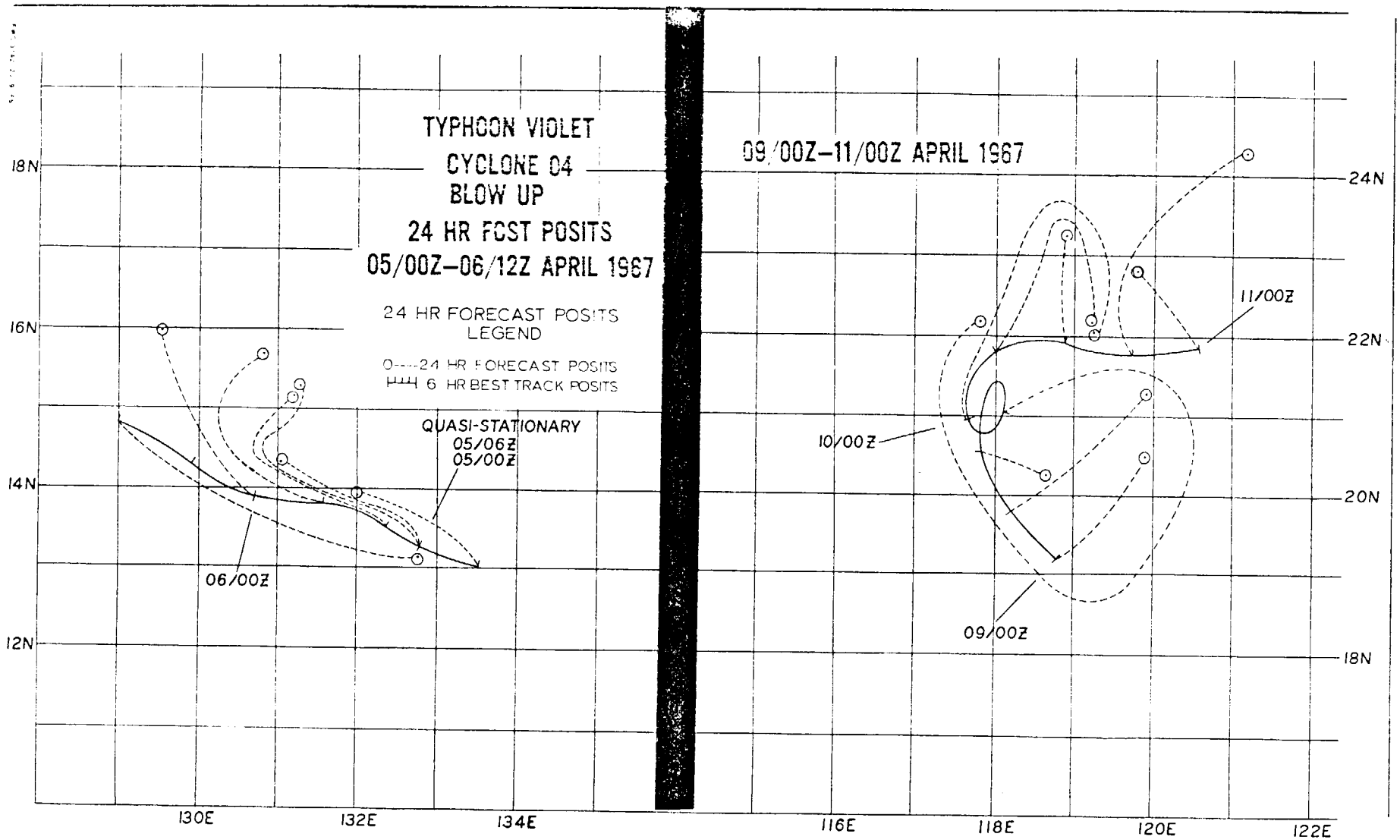
DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DIST.	48 HR. ERROR DEG. DIST.	72 HR. ERROR DEG. DIST.
010600Z	05.1N	149.0E	--------	--------	--------
011200Z	05.6N	148.0E	--------	--------	--------
011800Z	06.1N	147.0E	--------	--------	--------
020000Z	06.2N	145.8E	--------	--------	--------
020600Z	06.6N	144.6E	106-0144	--------	--------
021200Z	07.6N	143.6E	120-0186	--------	--------
021800Z	08.2N	142.3E	120-0234	--------	--------
030000Z	08.9N	140.8E	121-0090	--------	--------
030600Z	10.0N	139.6E	166-0174	--------	--------
031200Z	10.9N	138.3E	150-0192	--------	--------
031800Z	11.1N	137.1E	146-0150	--------	--------
040000Z	12.0N	136.3E	230-0054	133-0228	--------
040600Z	12.3N	135.2E	270-0060	165-0282	--------
041200Z	12.7N	134.3E	360-0066	152-0240	--------
041800Z	13.0N	133.5E	299-0096	157-0186	--------
050000Z	13.3N	132.8E	302-0120	282-0168	--------
050600Z	13.3N	132.8E	325-0144	290-0258	188-0288
051200Z	13.5N	132.4E	327-0120	322-0264	--------
051800Z	13.7N	131.6E	337-0120	303-0300	222-0132
060000Z	13.8N	130.7E	333-0144	302-0318	--------
060600Z	14.3N	129.9E	073-0078	342-0258	299-0360
061200Z	14.7N	129.0E	113-0228	356-0186	--------
061800Z	15.1N	128.1E	106-0144	004-0192	307-0402
070000Z	15.5N	127.2E	134-0030	016-0216	--------
070600Z	15.9N	126.3E	105-0042	085-0198	016-0348
071200Z	16.3N	125.2E	000-0030	107-0354	--------
071800Z	16.8N	124.1E	074-0102	103-0258	040-0318
080000Z	17.3N	122.8E	052-0072	090-0156	--------
080600Z	17.6N	121.7E	065-0108	080-0192	089-0360
081200Z	18.1N	120.5E	067-0102	065-0210	--------
081800Z	18.7N	119.4E	065-0096	077-0264	099-0426
090000Z	19.2N	118.7E	038-0096	063-0234	--------
090600Z	19.7N	118.2E	044-0126	066-0258	073-0408
091200Z	20.6N	117.8E	113-0042	070-0252	--------

TROPICAL CYCLONE 04 -- 04/01/0600Z TO 04/12/0600Z
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.
091800Z	21.1N	118.1E	349	0066	066	0216	078	0390
100000Z	20.9N	117.6E	052	0114	048	0228	--------	
100600Z	21.8N	118.0E	072	0072	052	0225	069	0396
101200Z	21.9N	118.9E	033	0096	033	0108	--------	
101800Z	21.7N	119.7E	027	0174	009	0156	053	0342

AVERAGE 24 HOUR ERROR - 0111 MI.
AVERAGE 48 HOUR ERROR - 0228 MI.
AVERAGE 72 HOUR ERROR - 0347 MI.


TYPHOON VIOLET
CYCLONE 04
01–12 APRIL 1967
24 HR FORECAST POSITS
LEGEND
0----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
SEE BLOW UP
FOLLOWING PAGE
01/06Z
02/00Z
03/00Z
04/00Z
05/00Z
06/00Z
07/00Z
08/00Z
09/00Z
10/00Z
11/00Z
12/06Z
12/00Z
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIPAN
GUAM
YAP
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
KUSAIE
FUMATAHACHI
NAURU I
WAKE I


TYPHOON VIOLET
CYCLONE 04
BLOW UP
24 HR FCST POSITS
05/00Z–06/12Z APRIL 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
QUASI-STATIONARY
05/06Z
05/00Z
06/00Z
18N
16N
14N
12N
130E
132E
134E
09/00Z–11/00Z APRIL 1967
11/00Z
10/00Z
09/00Z
24N
22N
20N
18N
116E
118E
120E
122E

TROPICAL CYCLONE 06 - 06/26/0600Z TO 06/30/0600Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 17
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 10
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 1164 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 967MBS AT 281600Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2696M. AT 281600Z
3. MAXIMUM SURFACE WIND - 080 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 415 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - LOW LEVEL SURGE INTO CYCLONIC CIRCULATION FROM THE SOUTH WITH SUBSEQUENT DIVERGENCE AT 200MB LEVEL

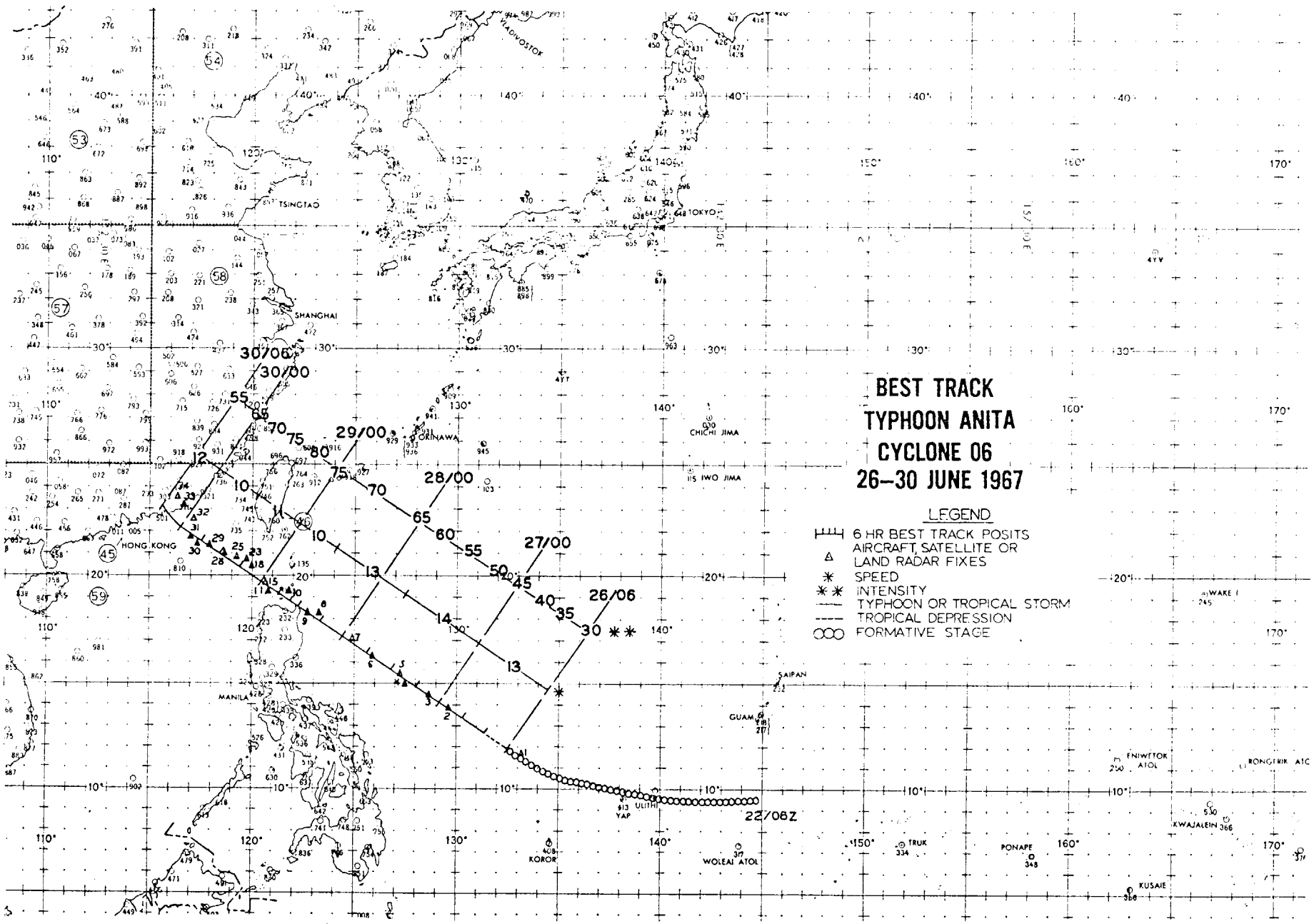
B. INITIAL SURFACE VORTEX

1. JUNCTION VORTEX AT 240000Z
2. SURFACE PRESSURE LESS THAN 1008MB

C. 200MB FLOW ABOVE SURFACE VORTEX

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

III. FINAL DISPOSITION - DISSIPATED OVER LAND


BEST TRACK
TYPHOON ANITA
CYCLONE 06
26–30 JUNE 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIPAN
GUAM
ULITHI
YAP
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
KWAJALEIN
ENIWETOK ATOL
RONGERIK ATOL
WAKE I
30/06
30/00
29/00
28/00
27/00
26/06
22/06Z

EYE FIXES CYCLONE 06

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	260228Z	11.6N 133.2E	54-P-P--	0460M	035	025	002	---	--/--	----			--
2	262200Z	13.9N 129.6E	54-P-P05	0460M	042	040	997	---	--/--	----			--
3	270300Z	14.5N 128.7E	54-P-P05	0460M	049	045	994	---	--/--	CIRC	----	08	--
4	270700Z	15.0N 127.5E	SLTLS	STG X	DIA 03	BNDS 2							
5	270946Z	15.4N 127.2E	54-P-P02	700MB	040	050	990	3021	13/--	----			F.B.
6	271603Z	16.3N 125.9E	VW-P-P05	0240M	---	050	984	2981	14/--	CIRC	----	10	05
7	272200Z	17.0N 124.9E	VW-P-P05	0280M	---	070	984	2996	13/--	CIRC	----	14	05
8	280650Z	18.2N 123.3E	54-P-F02	700MB	050	060	980	2899	13/--	----			F.B.
9	281150Z	18.3N 122.6E	54-P-P03	500MB	055	050	978	2915	15/14	CIRC	----	25	10
10	281600Z	19.2N 121.8E	VW-P-P02	700MB	050	---	967	2696	13/--	CIRC	----	20	--
11	282000Z	19.3N 120.8E	LND RDR		---	---	---	---	--/--	----			--
12	282100Z	19.2N 120.7E	LND RDR		---	---	---	---	--/--	CIRC	----	10	--
13	282133Z	19.5N 120.8E	VW-P-P02	700MB	---	070	972	2910	--/--	CIRC	----	08	--
14	282200Z	19.3N 120.6E	LND RDR		---	---	---	---	--/--	CIRC	----	10	--
15	282310Z	19.7N 120.6E	LND RDR		---	---	---	---	--/--	----			--
16	290005Z	19.6N 120.3E	LND RDR		---	---	---	---	--/--	----			--
17	290010Z	19.7N 120.4E	LND RDR		---	---	---	---	--/--	CIRC	----	30	--
18	290115Z	20.0N 120.4E	LND RDR		---	---	---	---	--/--	----			--
19	290155Z	20.0N 120.2E	LND RDR		---	---	---	---	--/--	----			--
20	290250Z	20.0N 120.1E	LND RDR		---	---	---	---	--/--	----			--
21	290315Z	20.2N 120.0E	LND RDR		---	---	---	---	--/--	----			--
22	290355Z	20.3N 120.1E	54-P-P02	700MB	060	075	978	2896	15/--	CIRC	----	20	--
23	290415Z	20.6N 119.8E	LND RDR		---	---	---	---	--/--	----			--
24	290550Z	20.7N 119.6E	LND RDR		---	---	---	---	--/--	----			--

EYE FIXES CYCLONE 06

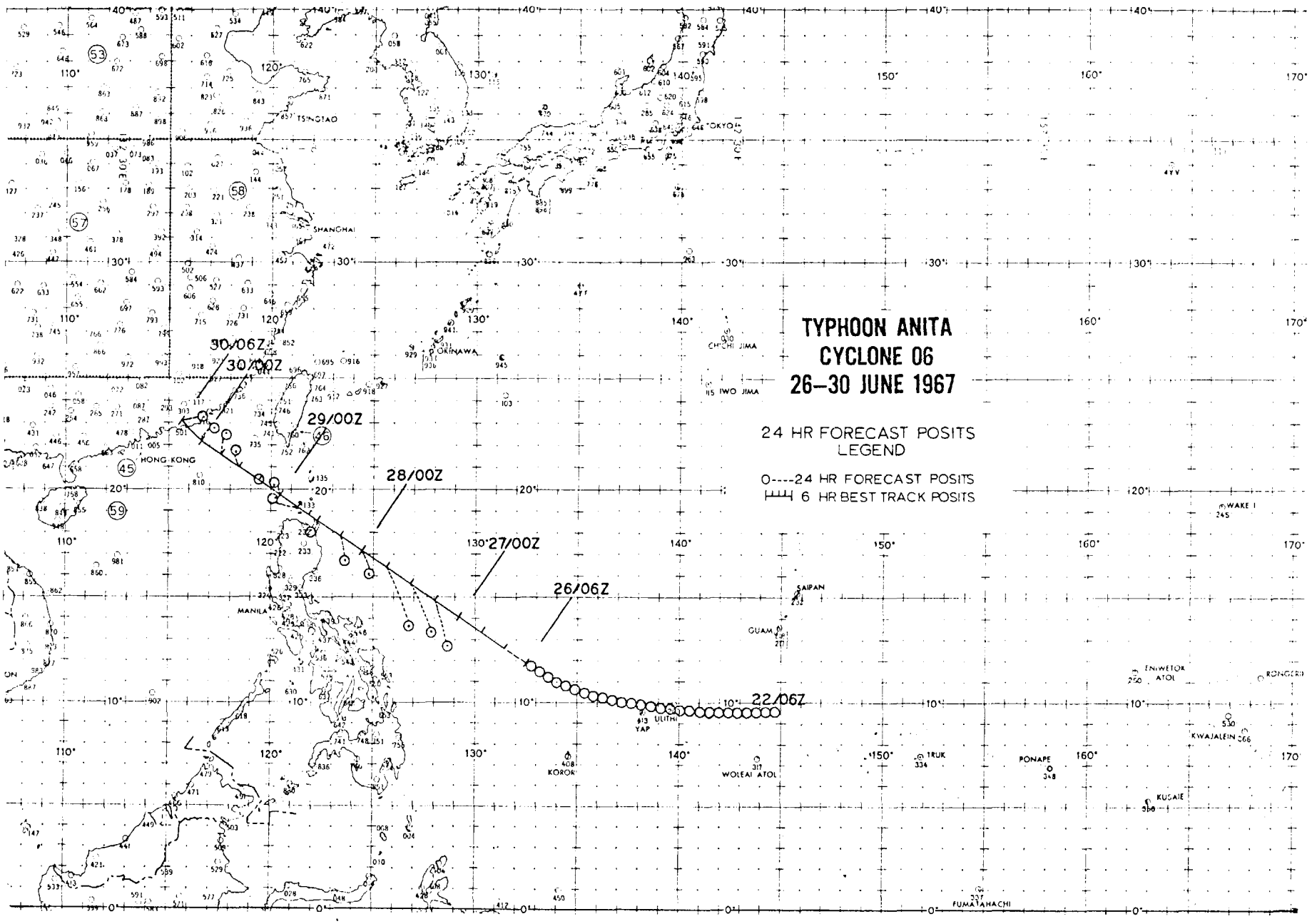
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	EYE FORM	ORIEN-TATION	EYE DIA	THKNS WALL CLOUD
25	290715Z	20.7N 119.3E	LND RDR		---	---	---	---	--/--	----			--
26	290815Z	20.8N 119.1E	LND RDR		---	---	---	---	--/--	----			--
27	290945Z	20.7N 119.0E	54-P-P02	700MB	064	080	975	2874	17/--	CIRC	----	12	--
28	291050Z	21.0N 118.6E	LND RDR		---	---	---	---	--/--	----			--
29	291600Z	21.4N 117.9E	VW-P-P10	700MB	---	---	998	2917	15/11	CIRC	----	07	--
30	291900Z	21.5N 117.4E	VW-R-P10	700MB	---	---	---	---	--/--	----			--
31	292158Z	21.7N 117.0E	VW-P-P05	0240M	---	085	980	---	--/--	CIRC	----	15	--
32	300210Z	22.5N 117.2E	LND RDR		---	---	---	---	--/--	----			--
33	300300Z	23.1N 116.8E	LND RDR		---	---	---	---	--/--	----			--
34	300600Z	23.5N 116.6E	LND RDR		---	---	---	---	--/--	----			--

TROPICAL CYCLONE 06 -- 06/26/0600Z TO 06/30/0600Z

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.
261200Z	12.7N	131.4E	--------	--------	--------
261800Z	13.4N	130.3E	--------	--------	--------
270000Z	14.2N	129.2E	--------	--------	--------
270600Z	14.9N	128.0E	161-0132	--------	--------
271200Z	15.7N	126.8E	156-0150	--------	--------
271800Z	16.5N	125.6E	156-0174	--------	--------
280000Z	17.3N	124.5E	165-0072	--------	--------
280600Z	18.0N	123.3E	165-0072	--------	--------
281200Z	18.8N	122.2E	190-0036	--------	--------
281800Z	19.3N	121.3E	291-0060	--------	--------
290000Z	19.9N	120.5E	303-0018	171-0084	--------
290600Z	20.5N	119.5E	----0000	169-0066	--------
291200Z	21.1N	118.5E	351-0042	214-0018	--------
291800Z	21.6N	117.6E	012-0060	012-0090	--------
300000Z	22.1N	116.6E	036-0048	047-0120	--------
300600Z	23.0N	115.8E	074-0060	066-0156	099-0036

AVERAGE 24 HOUR ERROR - 0071 MI.
AVERAGE 48 HOUR ERROR - 0089 MI.
AVERAGE 72 HOUR ERROR - 0036 MI.


TYPHOON ANITA
CYCLONE 06
26–30 JUNE 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
30/06Z
30/00Z
29/00Z
28/00Z
27/00Z
26/06Z
22/06Z
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
ENIWETOK ATOL
KWAJALEIN
WAKE I
FUMATAHACHI

TROPICAL CYCLONE 07 - 07/02/0000Z TO 07/08/0000Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 25
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 08
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 1326 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 979MBS AT 060354Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2938M. AT 060720Z
3. MAXIMUM SURFACE WIND - 075 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 430 MI

II. DEVELOPMENT

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

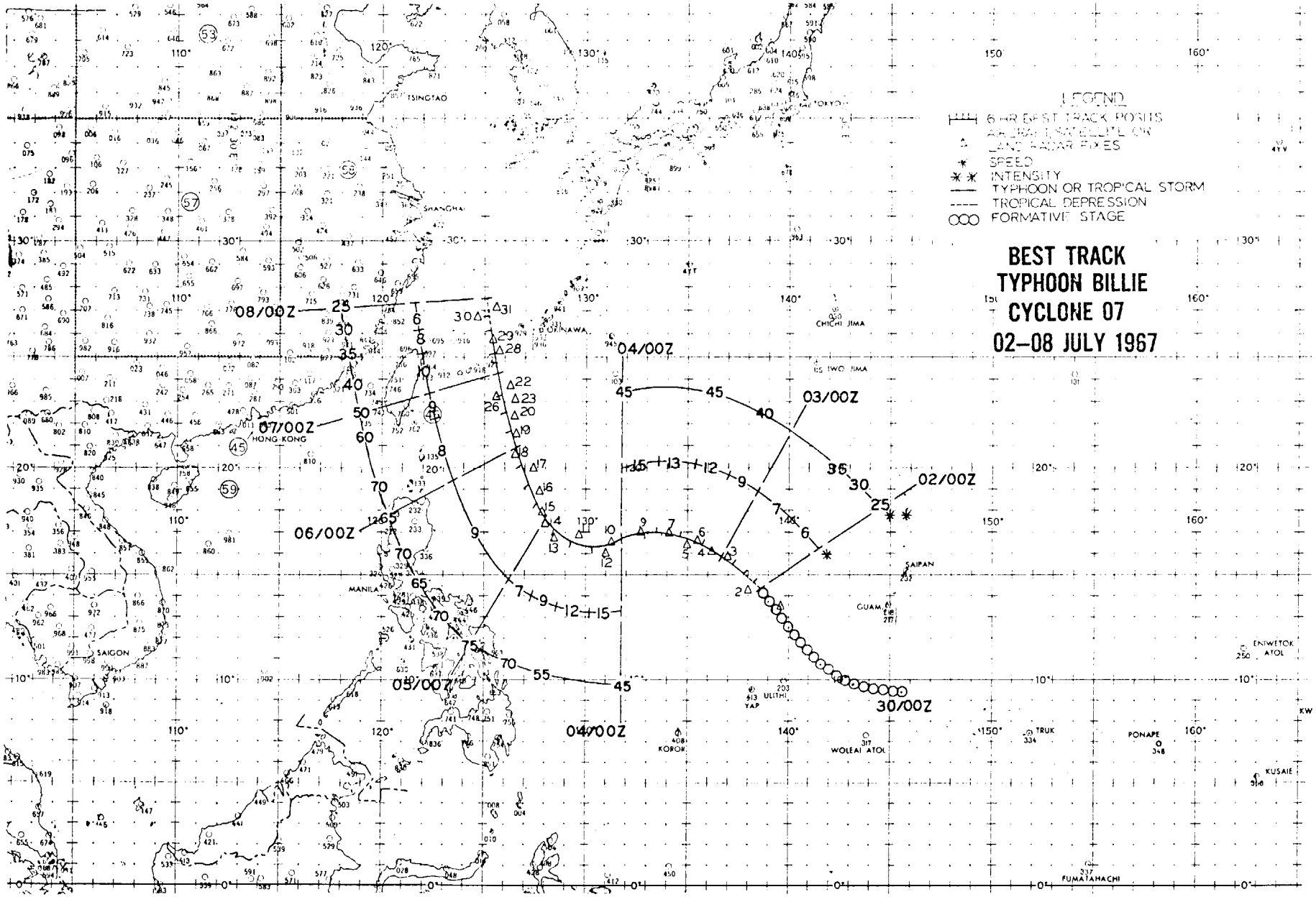
B. INITIAL SURFACE VORTEX

1. JUNCTION VORTEX AT 280600Z
2. SURFACE PRESSURE LESS THAN 1008MB

C. 200MB FLOW ABOVE SURFACE VORTEX

1. INITIAL - SOUTHEAST
2. UPON REACHING TYPHOON INTENSITY - NORTHEAST

III. FINAL DISPOSITION - BECAME EXTRATROPICAL


LEGEND
6 HR BEST TRACK POINTS
AIRCRAFT SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
BEST TRACK
TYPHOON BILLIE
CYCLONE 07
02–08 JULY 1967
08/00Z
07/00Z
06/00Z
05/00Z
04/00Z
03/00Z
02/00Z
30/00Z
TSINGTAO
SHANGHAI
OKINAWA
TOKYO
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
KUSAIE
FUMATAHACHI

EYE FIXES CYCLONE 07

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	012349Z	13.6N 139.7E	54-P-P02	0430M	035	025	003	---	--/--	ELIP	NE-SW	60X10	--
2	020300Z	14.2N 138.0E	VW-P-P10	0310M	038	038	003	---	--/--	ELIP	NE-SW	90X40	--
3	022201Z	15.9N 137.0E	54-P-P03	0460M	020	035	001	---	--/--	ELIP	NW-SE	30X10	--
4	030322Z	16.1N 136.2E	54-P-P03	0460M	037	030	998	---	--/--	CIRC	----	10	--
5	030515Z	16.4N 135.0E	ACFT RDR		---	---	---	---	--/--	----			--
6	030459Z	17.0N 138.0E	SLTLS	STG B	DIA -- BNDS -								
7	030940Z	16.6N 135.5E	VW-P-P05	0240M	035	032	997	---	--/--	----			F.B.
8	031530Z	17.0N 134.1E	VW-P-P05	0270M	030	---	997	---	--/--	----			F.B.
9	032124Z	17.0N 132.8E	54-P-P02	0460M	030	030	994	---	--/--	----			--
10	040200Z	16.5N 131.2E	54-P-P02	0460M	035	030	997	---	--/--	CIRC	----	25	--
11	040537Z	16.0N 131.0E	SLTLS	STG B	DIA -- BNDS -								
12	041030Z	16.9N 129.6E	VW-P-P05	0340M	050	050	988	3029	18/09	----			F.B.
13	041625Z	16.8N 128.3E	VW-P-P05	700MB	050	---	990	3009	09/06	CIRC	----	35	--
14	042120Z	17.5N 128.0E	VW-P-P05	700MB	---	055	---	2966	17/--	CIRC	----	08	--
15	050330Z	17.9N 127.9E	54-P-P03	700MB	062	070	982	2932	19/--	----			F.B.
16	050931Z	18.9N 127.8E	54-P-P02	700MB	045	055	985	2969	18/--	CIRC	----	15	--
17	051600Z	19.9N 127.4E	VW-P-P01	0300M	072	070	982	---	--/--	CIRC	----	25	--
18	052140Z	20.6N 126.6E	VW-P-P02	0240M	060	060	984	---	--/--	CIRC	----	25	--
19	060354Z	21.5N 126.4E	54-P-P03	700MB	042	065	979	2941	18/--	----			N.F.B.
20	060720Z	22.3N 126.4E	54-P-P03	700MB	042	055	979	2938	18/--	----			--
21	060946Z	22.4N 126.3E	54-P-P03	700MB	050	055	982	2951	17/--	----			--
22	061518Z	23.8N 126.2E	VW-UNK--		---	---	---	---	--/--	----			--
23	061520Z	23.1N 126.4E	LND RDR		---	---	---	---	--/--	----			--
24	061620Z	23.3N 126.4E	LND RDR		---	---	---	---	--/--	----			--

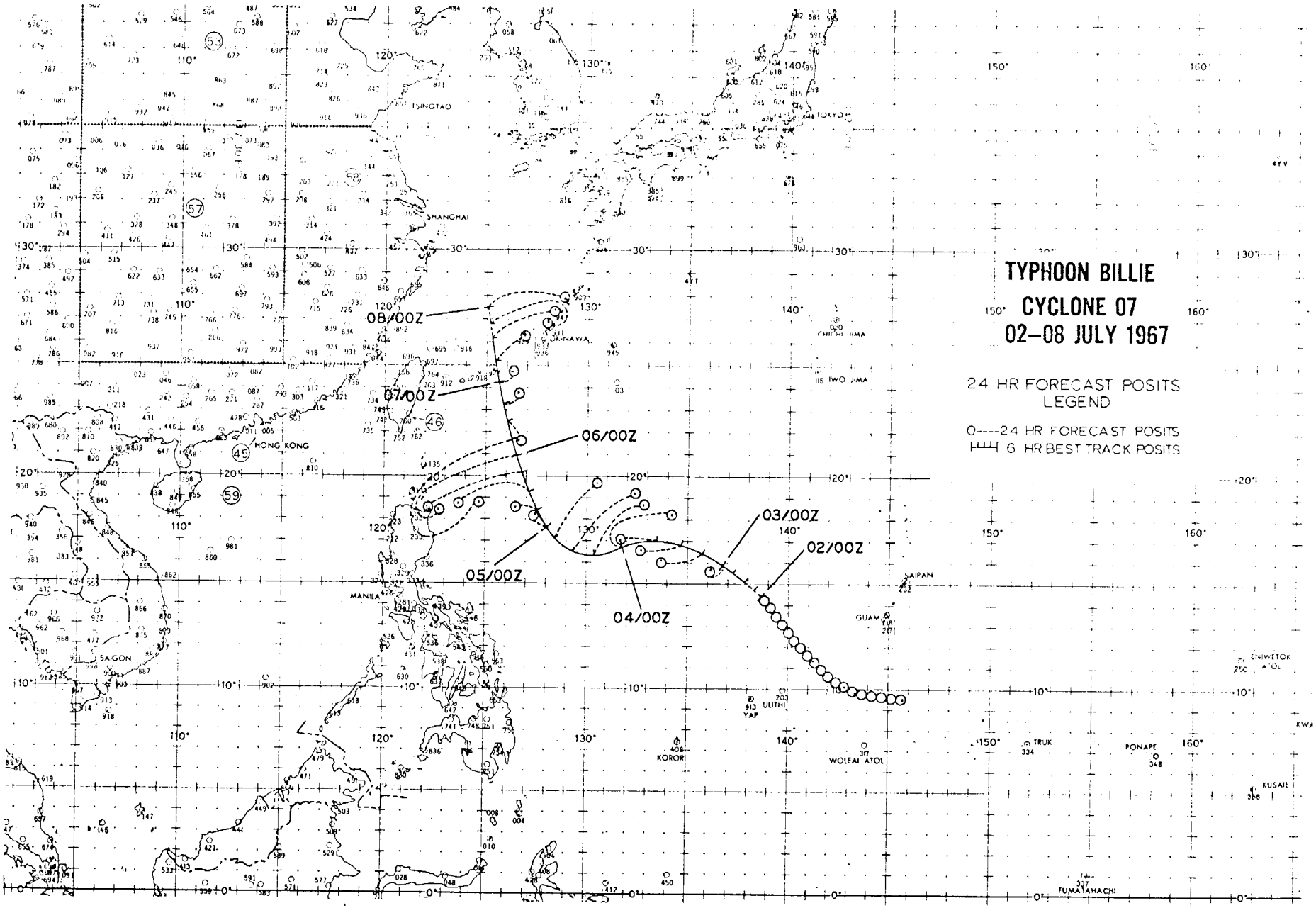
EYE FIXES CYCLONE 07

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	061750Z	23.4N 126.2E	LND RDR		---	---	---	---	--/--	----			--
26	061830Z	23.2N 125.7E	VW-P-P02	0370M	060	045	985	---	--/--	CIRC	----	50	--
27	062148Z	23.6N 125.7E	VW-P-P02	700MB	---	050	---	3011	21/--	CIRC	----	12	N.F.B.
28	070430Z	25.2N 125.8E	54-P-P02	0460M	030	035	995	---	09/--	CIRC	----	10	--
29	070920Z	25.6N 125.4E	54-P-P02	0490M	032	035	996	---	--/--	----			--
30	071830Z	26.7N 124.6E	VW-P-L05	700MB	040	---	---	3103	12/--	----			--
31	072145Z	27.1N 125.6E	VW-P-L05	700MB	030	025	005	3093	15/--	----			--

TROPICAL CYCLONE 07 -- 07/02/0000Z TO 07/08/0000Z
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.
021200Z	15.0N	137.7E	--------	--------	--------
021800Z	15.5N	137.3E	--------	--------	--------
030000Z	15.9N	136.7E	244-0024	--------	--------
030600Z	16.4N	135.8E	262-0114	--------	--------
031200Z	16.8N	134.7E	264-0108	--------	--------
031800Z	17.0N	133.4E	270-0096	--------	--------
040000Z	16.7N	131.8E	058-0156	--------	--------
040600Z	16.3N	130.4E	044-0198	--------	--------
041200Z	16.5N	129.2E	049-0228	--------	--------
041800Z	17.1N	128.4E	037-0192	--------	--------
050000Z	17.7N	128.1E	324-0048	--------	--------
050600Z	18.5N	127.7E	275-0066	036-0198	--------
051200Z	19.3N	127.3E	262-0198	035-0180	--------
051800Z	20.2N	126.9E	248-0276	013-0132	--------
060000Z	21.0N	126.6E	235-0270	254-0222	--------
060600Z	21.8N	126.3E	206-0192	253-0258	022-0162
061200Z	22.5N	126.1E	159-0048	259-0366	--------
061800Z	23.2N	125.9E	046-0048	253-0438	016-0180
070000Z	24.2N	125.6E	046-0042	243-0444	--------
070600Z	25.1N	125.4E	046-0108	226-0414	254-0420
071200Z	26.1N	125.2E	067-0174	152-0114	--------

AVERAGE 24 HOUR ERROR - 0136 MI.
AVERAGE 48 HOUR ERROR - 0276 MI.
AVERAGE 72 HOUR ERROR - 0254 MI.


TYPHOON BILLIE
CYCLONE 07
02–08 JULY 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
08/00Z
07/00Z
06/00Z
05/00Z
04/00Z
03/00Z
02/00Z
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
KUSAIE
FUMATAHACHI

TROPICAL CYCLONE 08 - 07/06/0600Z TO 07/12/0600Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 25
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 19
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 1518 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 960MBS AT 102103Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2826M. AT 100920Z
3. MAXIMUM SURFACE WIND - 100 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 320 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - A COLD CORE LOW BECOMING WARM CORE AFTER DEVELOPMENT OF DIVERGENCE AT 200MB

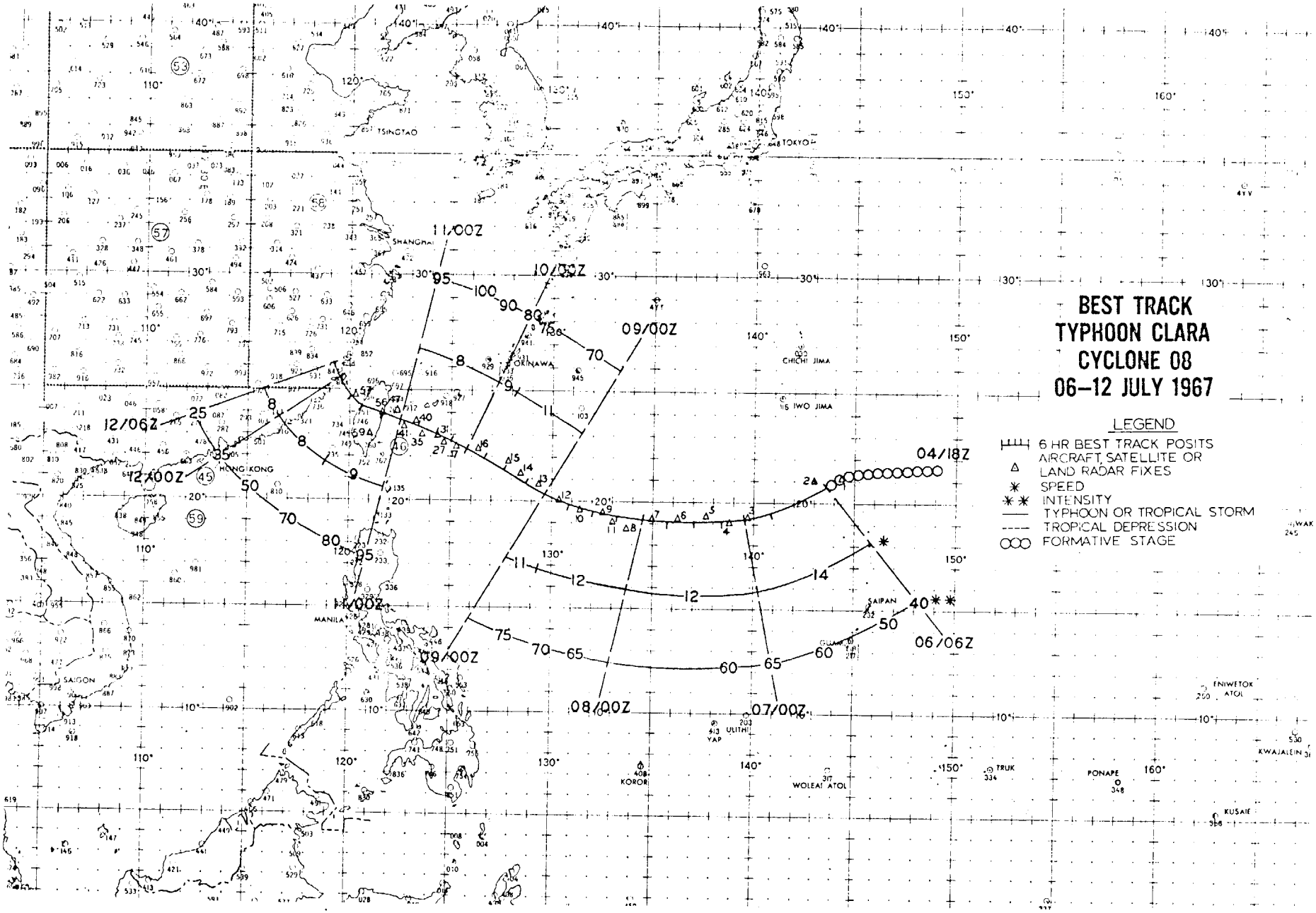
B. INITIAL SURFACE VORTEX

1. COLD VORTEX AT 041800
2. SURFACE PRESSURE LESS THAN 1010MB

C. 200MB FLOW ABOVE SURFACE VORTEX

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

III. FINAL DISPOSITION - DISSIPATED OVER LAND


BEST TRACK
TYPHOON CLARA
CYCLONE 08
06–12 JULY 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
12/06Z
12/00Z
11/00Z
10/00Z
09/00Z
08/00Z
07/00Z
06/06Z
04/18Z
HONG KONG
MANILA
SAIGON
TSINGTAO
SHANGHAI
OKINAWA
TOKYO
CHICHI JIMA
IWO JIMA
SAIPAN
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
ENIWETOK ATOL
KWAJALEIN
WAK

EYE FIXES CYCLONE 08

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	060350Z	21.1N 144.3E	54-P-P03	700MB	055	060	997	3018	14/--	ELIP	NW-SE	15X10	F.B.
2	060500Z	21.0N 143.0E	SLTLS	STG X	DIA 03	BNDS 1							
3	062310Z	19.2N 139.7E	54-P-P05	700MB	070	065	984	2984	16/--	CIRC	----	08	--
4	070345Z	19.0N 138.9E	54-P-F03	700MB	040	070	989	3039	14/--	----			--
5	070930Z	19.3N 137.7E	VW-P-P08	0460M	---	060	987	3063	17/14	----			--
6	071537Z	19.1N 136.2E	VW-P-F12	0460M	---	---	989	---	--/--	----			N.F.B.
7	072205Z	19.2N 135.0E	54-P-P05	700MB	045	065	987	3005	16/--	ELIP	NW-SE	25X10	--
8	080350Z	18.8N 133.8E	54-P-F03	700MB	050	065	995	3042	14/--	----			--
9	080610Z	19.0N 133.0E	SLTLS	STG C	DIA 06	BNDS -							
10	081000Z	19.5N 132.5E	VW-P-P02	0410M	050	055	982	---	--/--	----			F.B.
11	081541Z	19.6N 131.3E	VW-P-P05	0250M	050	065	978	---	--/--	CIRC	----	15	--
12	082146Z	20.0N 130.4E	VW-P-P05	0230M	070	070	977	---	--/--	CIRC	----	22	--
13	090419Z	20.7N 129.3E	54-P-P02	700MB	072	070	978	2905	17/--	----			F.B.
14	090646Z	21.0N 128.0E	SLTLS	STG B	DIA --	BNDS -							
15	090925Z	21.2N 128.3E	54-P-P02	700MB	052	055	978	2908	16/--	----			F.B.
16	091618Z	21.8N 126.9E	VW-P-P10	0460M	---	---	979	---	--/--	CIRC	----	10	--
17	092130Z	22.3N 126.2E	VW-P-P10	0370M	050	065	974	---	--/--	ELIP	NW-SE	16X07	--
18	100000Z	22.4N 125.3E	LND RDR		---	---	---	---	--/--	----			--
19	100130Z	22.3N 125.1E	LND RDR		---	---	---	---	--/--	----			--
20	100250Z	22.3N 124.9E	LND RDR		---	---	---	---	--/--	----			--
21	100300Z	22.3N 125.3E	LND RDR		---	---	---	---	--/--	----			--
22	100350Z	22.3N 124.9E	LND RDR		---	---	---	---	--/--	----			--
23	100353Z	22.4N 125.3E	54-P-P03	700MB	070	090	965	2833	26/--	CIRC	----	15	--
24	100530Z	22.3N 124.8E	LND RDR		---	---	---	---	--/---	----			--

EYE FIXES CYCLONE 08

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	100630Z	22.4N 125.0E	LND RDR		---	---	---	---	--/--	----			--
26	100645Z	22.6N 124.8E	LND RDR		---	---	---	---	--/--	CIRC	----	20	--
27	100810Z	22.6N 124.8E	LND RDR		---	---	---	---	--/--	----			--
28	100845Z	22.6N 124.7E	LND RDR		---	---	---	---	--/--	ELIP	N-S	22X18	--
29	100903Z	22.7N 124.8E	LND RDR		---	---	---	---	--/--	----			--
30	100920Z	22.6N 124.7E	54-P-P03	700MB	070	100	968	2826	17/--	CIRC	----	35	08
31	101140Z	22.9N 124.3E	LND RDR		---	---	---	---	--/--	----			--
32	101300Z	23.0N 124.2E	LND RDR		---	---	---	---	--/--	CIRC	----	30	--
33	101315Z	22.9N 124.1E	LND RDR		---	---	---	---	--/--	----			--
34	101430Z	22.7N 124.1E	LND RDR		---	---	---	---	--/--	----			--
35	101540Z	23.0N 123.6E	VW-P-P10	0240M	080	080	967	---	--/--	CIRC	----	20	--
36	101630Z	23.0N 123.8E	LND RDR		---	---	---	---	--/--	----			--
37	101645Z	22.9N 123.5E	LND RDR		---	---	---	---	--/--	----			--
38	101840Z	23.1N 123.3E	LND RDR		---	---	---	---	--/--	----			--
39	101900Z	23.2N 123.2E	LND RDR		---	---	---	---	--/--	----			--
40	101920Z	23.2N 123.6E	VW-UNK--		---	---	---	---	--/--	----			--
41	102103Z	23.5N 123.2E	VW-P-P05	0210M	120	110	960	---	--/--	CIRC	----	14	07
42	102000Z	23.2N 122.9E	LND RDR		---	---	---	---	--/--	----			--
43	102100Z	23.4N 122.8E	LND RDR		---	---	---	---	--/--	----			--
44	102230Z	23.4N 123.0E	LND RDR		---	---	---	---	--/--	----			--
45	102300Z	23.7N 123.8E	LND RDR		---	---	---	---	--/--	----			--
46	102330Z	22.8N 122.5E	LND RDR		---	---	---	---	--/--	----			--
47	110030Z	23.8N 122.3E	LND RDR		---	---	---	---	--/--	----			--
48	110100Z	23.8N 122.5E	LND RDR		---	---	---	---	--/--	----			--

EYE FIXES CYCLONE 08

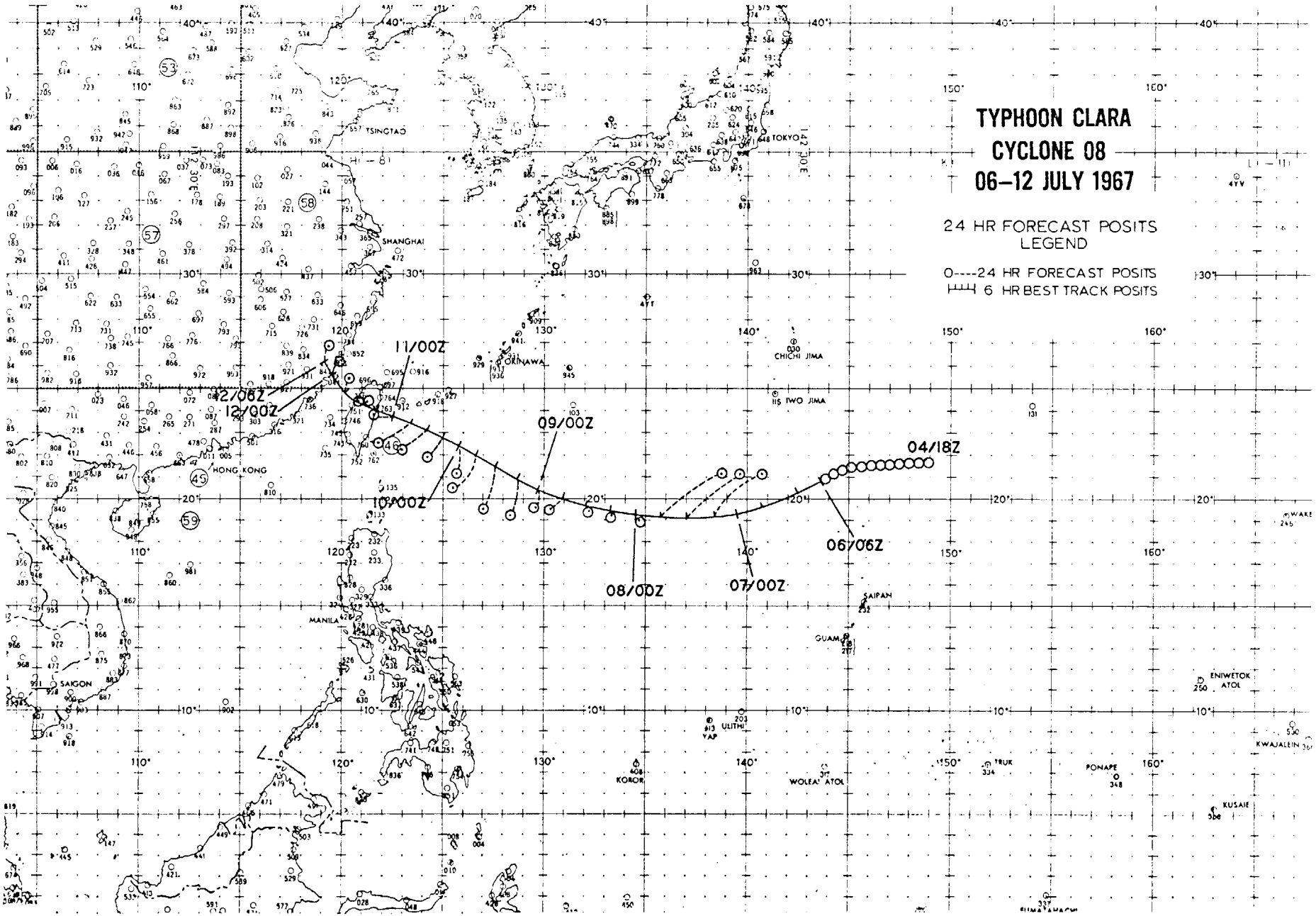
FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	EYE FORM	ORIEN-TATION	EYE DIA	THKNS WALL CLOUD
49	110130Z	23.9N 122.4E	LND RDR		---	---	---	---	--/--	----			--
50	110200Z	23.8N 122.3E	LND RDR		---	---	---	---	--/--	----			--
51	110222Z	24.0N 122.3E	LND RDR		---	---	---	---	--/--	----			--
52	110230Z	23.8N 122.3E	LND RDR		---	---	---	---	--/--	----			--
53	110300Z	23.9N 122.2E	LND RDR		---	---	---	---	--/--	----			--
54	110344Z	23.8N 122.3E	S4-P-P02	500MB	075	070	965	2817	17/09	CIRC	----	20	10
55	110430Z	23.9N 122.1E	LND RDR		---	---	---	---	--/--	----			--
56	110600Z	24.0N 121.6E	LND RDR		---	---	---	---	--/--	----			--
57	110611Z	23.0N 121.0E	SLTLS	STG X	DIA 04	BNDS 3							
58	111930Z	24.7N 120.2E	VW-UNK--		---	---	---	---	--/--	----			--
59	112030Z	24.9N 120.1E	VW-UNK--		---	---	---	---	--/--	----			--

TROPICAL CYCLONE 08 -- 07/06/0600Z TO 07/12/0600Z

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.
060600Z	20.8N	143.6E	--------	--------	--------
061200Z	20.1N	142.3E	--------	--------	--------
061800Z	19.5N	140.9E	--------	--------	--------
070000Z	19.2N	139.5E	--------	--------	--------
070600Z	19.1N	138.3E	049-0180	--------	--------
071200Z	19.1N	137.0E	052-0192	--------	--------
071800Z	19.1N	135.8E	056-0210	--------	--------
080000Z	19.2N	134.5E	153-0012	--------	--------
080600Z	19.3N	133.2E	180-0006	065-0252	--------
081200Z	19.5N	132.0E	134-0006	069-0258	--------
081800Z	19.9N	130.9E	226-0030	075-0264	--------
090000Z	20.4N	129.8E	180-0054	134-0048	--------
090600Z	20.9N	128.7E	191-0102	180-0072	088-0288
091200Z	21.4N	127.7E	198-0114	180-0084	--------
091800Z	22.0N	126.7E	215-0114	199-0072	098-0294
100000Z	22.4N	125.8E	180-0078	180-0078	--------
100600Z	22.7N	125.0E	226-0066	204-0150	180-0054
101200Z	23.1N	124.2E	228-0084	212-0156	--------
101800Z	23.4N	123.4E	238-0096	236-0138	000-0024
110000Z	23.7N	122.6E	282-0054	198-0078	--------
110600Z	24.0N	121.7E	300-0030	247-0090	215-0168
111200Z	24.3N	120.8E	046-0006	258-0084	--------
111800Z	24.8N	120.1E	012-0030	270-0090	255-0126
120000Z	25.5N	119.5E	022-0030	355-0078	--------

AVERAGE 24 HOUR ERROR - 0074 MI.
AVERAGE 48 HOUR ERROR - 0124 MI.
AVERAGE 72 HOUR ERROR - 0159 MI.


TYPHOON CLARA
CYCLONE 08
06–12 JULY 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
04/18Z
06/06Z
07/00Z
08/00Z
09/00Z
10/00Z
11/00Z
12/06Z
12/00Z
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
ULITHI
YAP
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
ENIWETOK ATOL
KWAJALEIN
WAKE

TROPICAL CYCLONE 12 - 07/28/0000Z TO 08/02/1800Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 23
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 05
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 1380 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 969MBS AT 310325Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2832M. AT 310325Z
3. MAXIMUM SURFACE WIND - 080 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 400 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - FRACTURE OF A POLAR TROUGH AND AN EASTERLY WAVE

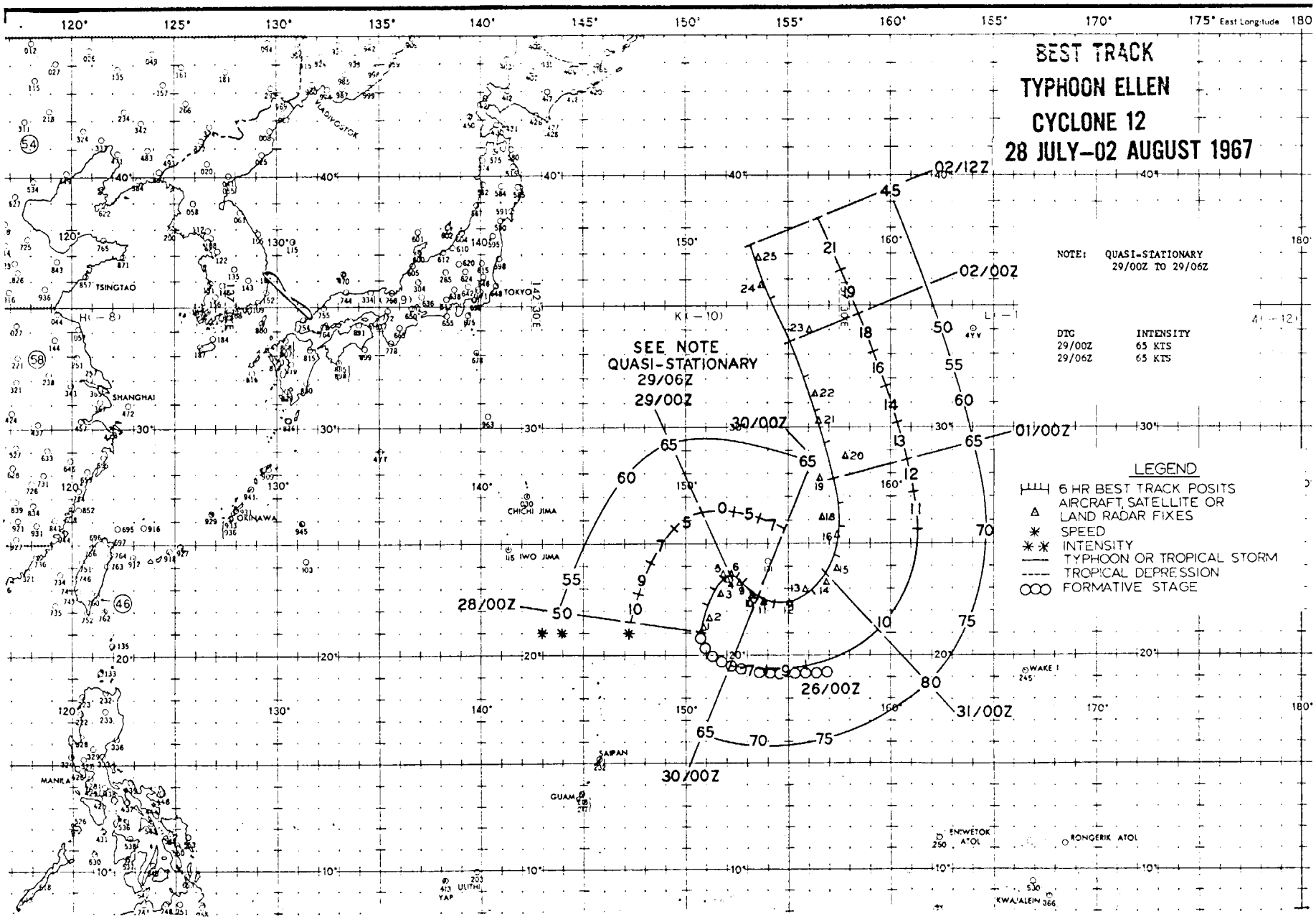
B. INITIAL SURFACE VORTEX

1. EMBEDDED VORTEX AT 260000Z
2. SURFACE PRESSURE LESS THAN 1006MB

C. 200MB FLOW ABOVE SURFACE VORTEX

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

III. FINAL DISPOSITION - BECAME EXTRATROPICAL

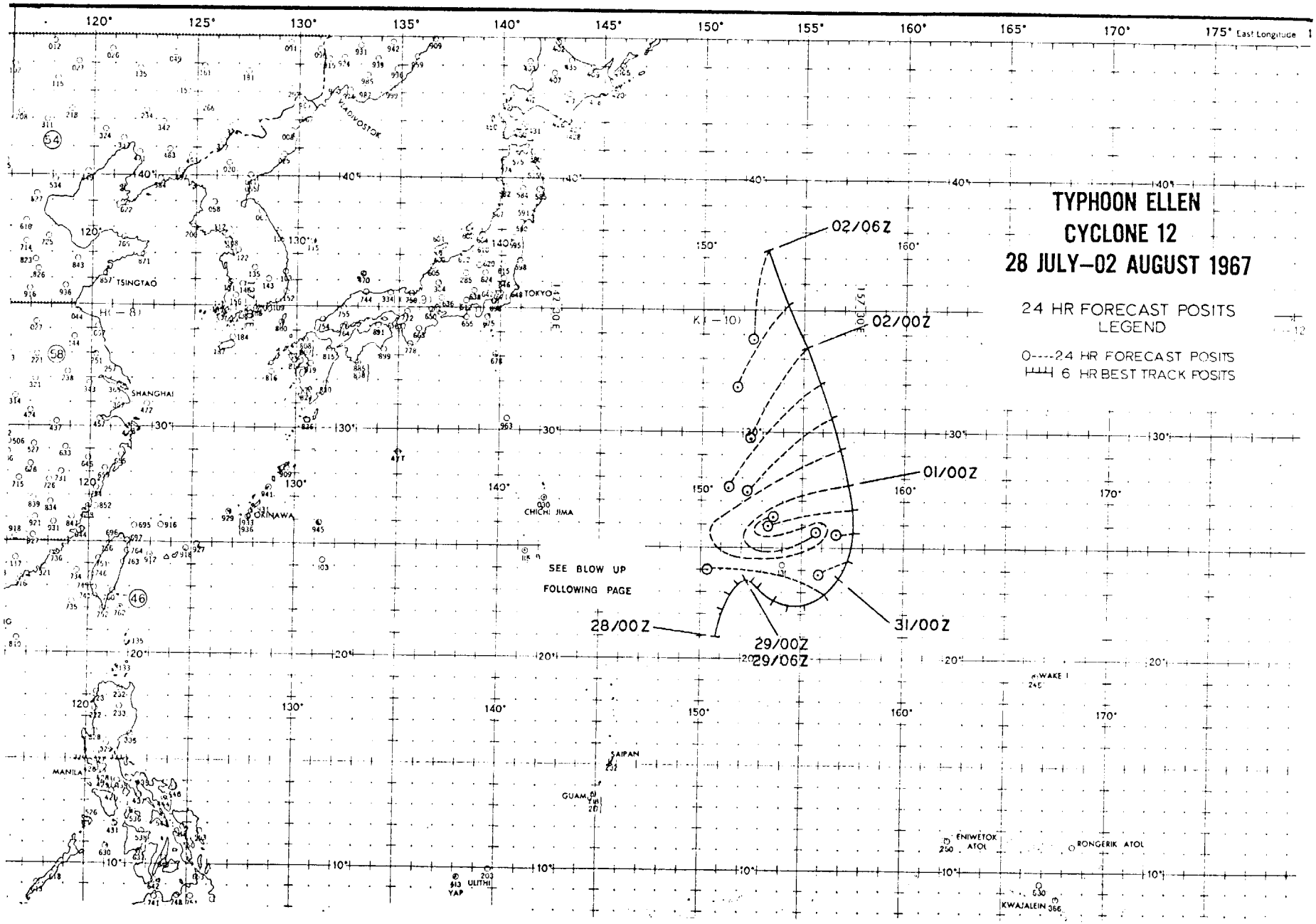

BEST TRACK
TYPHOON ELLEN
CYCLONE 12
28 JULY–02 AUGUST 1967
NOTE: QUASI-STATIONARY 29/00Z TO 29/06Z
DTG INTENSITY
29/00Z 65 KTS
29/06Z 65 KTS
SEE NOTE
QUASI-STATIONARY
29/06Z
29/00Z
30/00Z
02/12Z
02/00Z
01/00Z
28/00Z
26/00Z
31/00Z
30/00Z
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
175° East Longitude
VLADIVOSTOK
TSINGTAO
TOKYO
SHANGHAI
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
MANILA
WAKE I
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
YAP
ULITHI

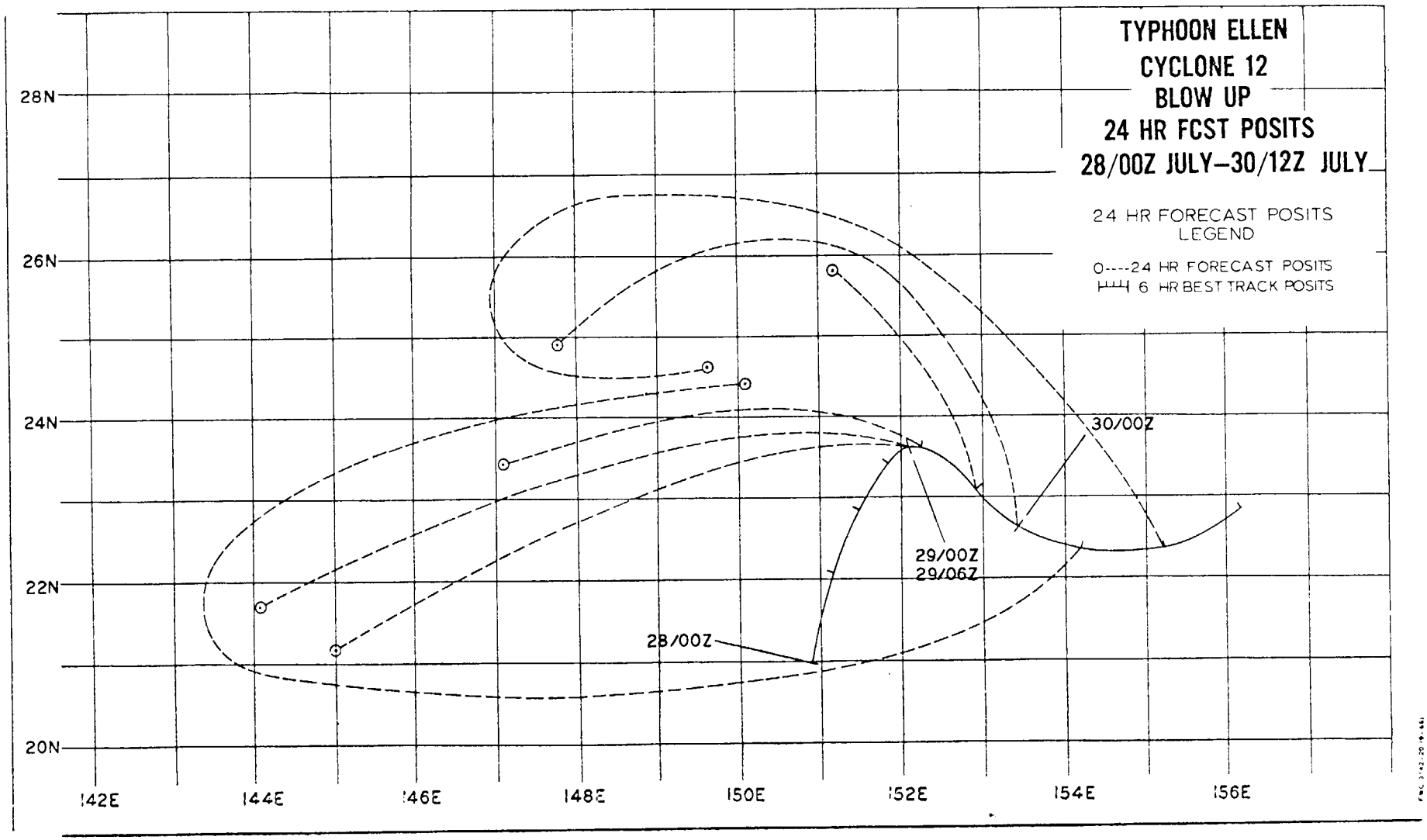
EYE FIXES CYCLONE 12

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	280130Z	21.2N 150.9E	54-P-L--		---	050	---	---	--/--	----			--
2	280400Z	21.6N 151.1E	54-P-P05	0460M	050	050	984	---	--/--	CIRC	----	20	--
3	281115Z	22.7N 151.6E	VW-P-P02	0350M	---	050	988	---	--/--	ELIP	NW-SE	38X20	--
4	281615Z	23.4N 152.0E	VW-R-P03	0400M	056	065	988	---	--/--	ELIP	N-S	30X25	--
5	282200Z	23.6N 151.8E	54-P-P08	700MB	038	045	985	2972	14/--	CIRC	----	12	--
6	290400Z	23.6N 152.1E	54-P-P03	700MB	035	045	983	2941	15/--	----			--
7	290925Z	23.7N 152.2E	VW-P-P05	0340M	---	045	986	---	--/--	CIRC	----	20	--
8	291230Z	23.5N 152.3E	VW-R-P--	0550M	---	---	---	---	--/--	----			--
9	291525Z	23.3N 152.7E	VW-P-P05	0240M	064	055	983	---	--/--	CIRC	----	18	--
10	292200Z	22.7N 153.2E	54-P-P05	700MB	058	060	983	2929	17/--	----			F.B.
11	300400Z	22.4N 153.8E	54-P-P03	700MB	055	060	978	2943	17/--	----			F.B.
12	300931Z	22.3N 155.0E	VW-P-P05	0300M	---	060	976	---	--/--	CIRC	----	12	--
13	301515Z	22.9N 155.8E	VW-P-P02	700MB	---	---	975	2869	16/--	CIRC	----	21	06
14	302207Z	23.2N 156.9E	54-P-P10	700MB	060	065	971	2832	15/--	CIRC	----	10	--
15	310325Z	23.9N 157.3E	54-P-P04	700MB	065	070	969	2832	16/--	CIRC	----	15	15
16	310509Z	25.0N 157.0E	SLTLS	STG X	DIA 05	BNDS 1							
17	311021Z	25.4N 157.4E	VW-P-P02	0260M	045	030	977	---	--/--	ELIP	NE-SW	50X20	12
18	311554Z	26.1N 156.6E	VW-P-P05	700MB	070	040	973	2914	--/--	ELIP	NW-SE	40X15	--
19	010000Z	27.8N 156.5E	54-P-P05	700MB	040	040	975	2911	22/--	CIRC	----	08	--
20	010322Z	28.7N 157.8E	54-P-P05	700MB	040	045	978	2914	19/--	----			F.B.
21	011025Z	30.2N 156.5E	VW-P-P05	0310M	038	035	978	---	--/--	----			F.B.
22	011526Z	31.4N 156.2E	VW-P-P05	0310M	050	038	979	---	--/--	----			F.B.
23	012106Z	34.0N 156.0E	SLTLS	STG -	DIA --	BNDS -							
24	020851Z	36.7N 153.6E	VW-P-F01	0230M	---	040	982	---	--/--	----			--

EYE FIXES CYCLONE 12

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	021000Z	36.8N 153.4E	VW-R-F01	0410M	066	050	985	---	--/--	----			F.B.


TYPHOON ELLEN
CYCLONE 12
28 JULY–02 AUGUST 1967
24 HR FORECAST POSITS
LEGEND
0----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
02/06Z
02/00Z
01/00Z
31/00Z
29/00Z
29/06Z
28/00Z
SEE BLOW UP
FOLLOWING PAGE
175° East Longitude
VLADIVOSTOK
TSINGTAO
TOKYO
SHANGHAI
OKINAWA
CHICHI JIMA
MANILA
SAIPAN
GUAM
YAP
ULITHI
WAKE I
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN


TYPHOON ELLEN
CYCLONE 12
BLOW UP
24 HR FCST POSITS
28/00Z JULY–30/12Z JULY
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
28N
26N
24N
22N
20N
142E
144E
146E
148E
150E
152E
154E
156E
30/00Z
29/00Z
29/06Z
28/00Z

TROPICAL CYCLONE 12 -- 07/28/0000Z TO 08/02/1200Z

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.
280000Z	21.0N	150.9E	--------	--------	--------
280600Z	22.1N	151.2E	--------	--------	--------
281200Z	22.8N	151.5E	--------	--------	--------
281800Z	23.4N	151.9E	--------	--------	--------
290000Z	23.6N	152.1E	250-0414	--------	--------
290600Z	23.6N	152.1E	255-0456	--------	--------
291200Z	23.6N	152.3E	268-0282	--------	--------
291800Z	23.1N	152.9E	330-0180	--------	--------
300000Z	22.6N	153.4E	294-0330	265-0816	--------
300600Z	22.3N	154.2E	299-0252	268-0852	--------
301200Z	22.3N	155.2E	294-0330	277-0684	--------
301800Z	22.8N	156.2E	282-0330	289-0588	--------
310000Z	23.5N	157.0E	258-0210	280-0804	--------
310600Z	24.4N	157.4E	252-0090	275-0624	263-1320
311200Z	25.6N	157.5E	262-0042	272-0696	--------
311800Z	26.7N	157.5E	260-0228	263-0606	270-0900
010000Z	27.8N	157.3E	214-0138	234-0330	--------
010600Z	29.2N	157.0E	226-0258	233-0342	264-0786
011200Z	30.6N	156.5E	229-0294	224-0372	--------
011800Z	32.0N	155.9E	223-0360	233-0504	248-0750
020000Z	33.5N	155.3E	215-0264	211-0486	--------
020600Z	35.2N	154.1E	212-0228	215-0594	217-0636
021200Z	37.3N	153.3E	191-0204	212-0534	--------

AVERAGE 24 HOUR ERROR - 0257 MI.
AVERAGE 48 HOUR ERROR - 0588 MI.
AVERAGE 72 HOUR ERROR - 0878 MI.

TROPICAL CYCLONE 21 - 08/19/0600Z TO 08/21/1200Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 10
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 03
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 0540 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 978MBS AT 202138Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2935M. AT 210726Z
3. MAXIMUM SURFACE WIND - 070 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 300 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - MONSOONAL SURGE WITH SUBSEQUENT DEVELOPMENT OF 200MB DIVERGENCE

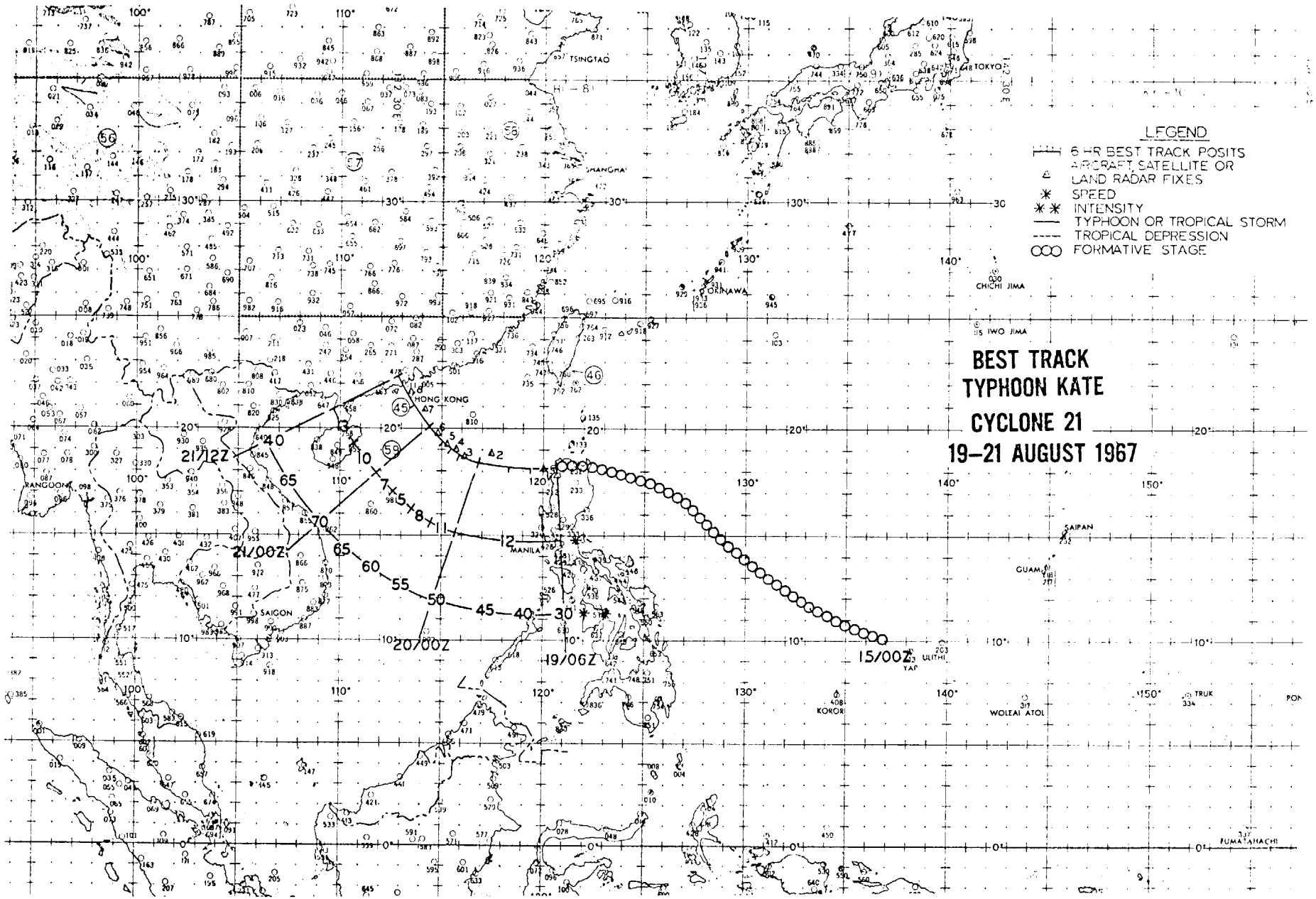
B. INITIAL SURFACE VORTEX

1. EMBEDDED VORTEX AT 150000Z
2. SURFACE PRESSURE LESS THAN 1007MB

C. 200MB FLOW ABOVE SURFACE VORTEX

1. INITIAL - EAST
2. UPON REACHING TYPHOON INTENSITY - NORTHEAST

III. FINAL DISPOSITION - DISSIPATED OVER LAND


BEST TRACK
TYPHOON KATE
CYCLONE 21
19–21 AUGUST 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
TSINGTAO
TOKYO
SHANGHAI
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
RANGOON
MANILA
SAIGON
SAIPAN
GUAM
ULITHI
YAP
KOROR
WOLEAI ATOL
TRUK
FUMATAHACHI
21/12Z
21/00Z
20/00Z
19/06Z
15/00Z

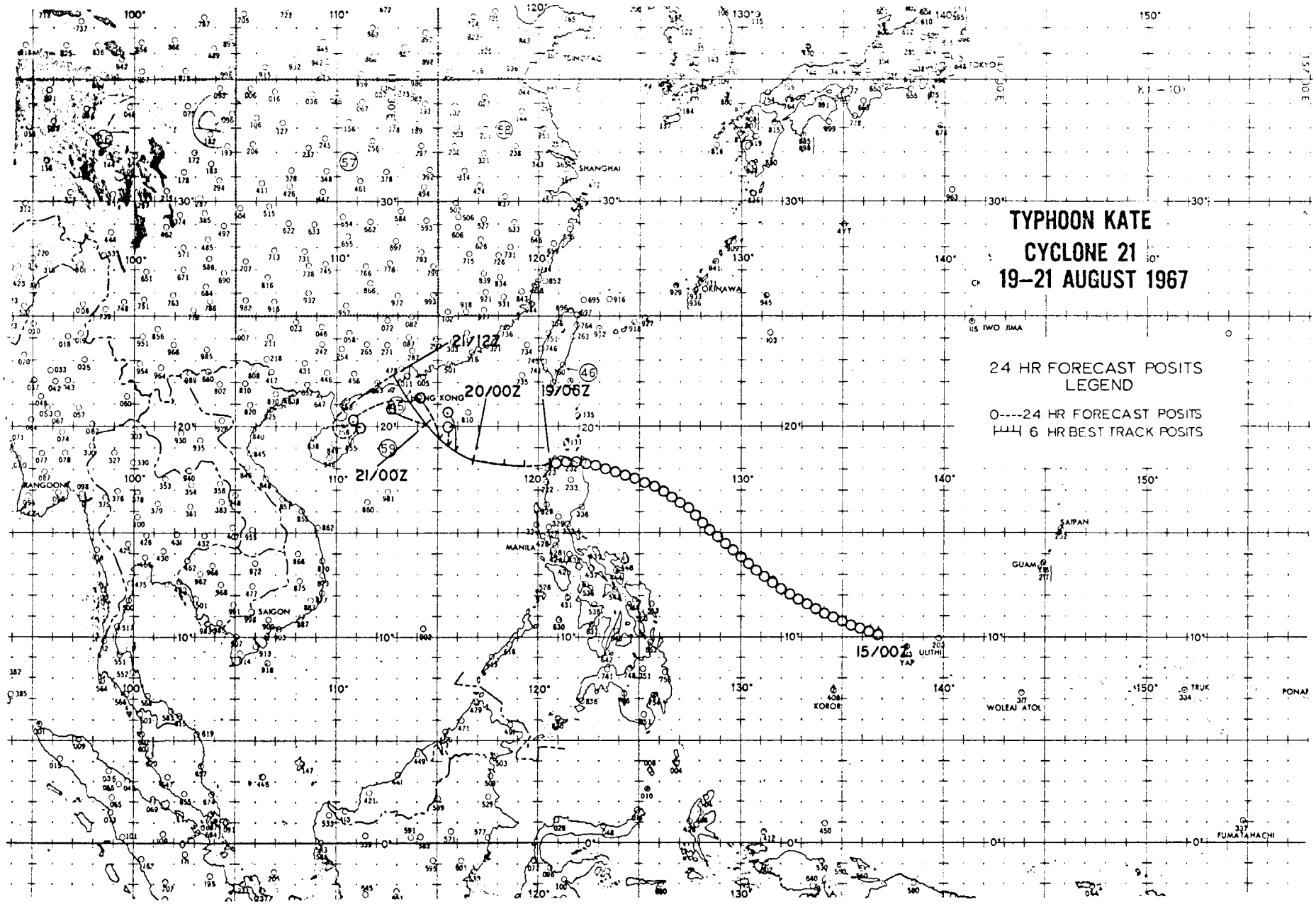
EYE FIXES CYCLONE 21

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	190918Z	18.1N 120.0E	VW-P-P03	0310M	040	038	987	3009	13/06	----			--
2	192207Z	18.8N 117.4E	VW-P-F05	0420M	045	035	986	---	--/--	----			F.B.
3	200349Z	18.7N 116.1E	54-P-P02	0440M	041	055	000	---	--/--	ELIP	N-S	40X20	--
4	200927Z	19.0N 115.7E	54-P-P05	700MB	046	075	984	2963	14/--	----			N.F.B.
5	201535Z	19.2N 115.3E	VW-P-P05	700MB	---	065	982	2999	25/--	----			F.B.
6	202138Z	19.7N 114.8E	VW-P-P03	0450M	048	065	978	2972	15/--	CIRC	----	40	--
7	210346Z	20.8N 114.1E	54-P-P01	700MB	072	065	982	2944	14/--	ELIP	N-S	30X20	--
8	210726Z	21.5N 113.3E	54-P-L01	700MB	075	065	---	2935	13/--	----			--

TROPICAL CYCLONE 21 -- 08/19/0600Z TO 08/21/1200Z
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.
191200Z	18.1N	119.4E	--------	--------	--------
191800Z	18.2N	118.2E	--------	--------	--------
200000Z	18.4N	116.9E	--------	--------	--------
200600Z	18.8N	115.9E	349-0102	--------	--------
201200Z	19.2N	115.5E	015-0048	--------	--------
201800Z	19.4N	115.1E	330-0120	--------	--------
210000Z	20.1N	114.5E	295-0108	--------	--------
210600Z	21.1N	113.7E	249-0162	--------	--------
211200Z	22.3N	112.9E	215-0168	326-0018	--------

AVERAGE 24 HOUR ERROR - 0118 MI.
AVERAGE 48 HOUR ERROR - 0018 MI.
AVERAGE 72 HOUR ERROR - ---- MI.


TYPHOON KATE
CYCLONE 21
19–21 AUGUST 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
21/12Z
20/00Z
19/06Z
21/00Z
15/00Z
HONG KONG
SHANGHAI
TSINGTAO
TOKYO
OKINAWA
IWO JIMA
RANGOON
SAIGON
MANILA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAP
FUMATAMACHI

TROPICAL CYCLONE 22 - 08/24/0600Z TO 08/29/1200Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 22
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 11
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 1326 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 937MBS AT 270400Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2576M. AT 270400Z
3. MAXIMUM SURFACE WIND - 125 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 450 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - FRACTURE OF A POLAR TROUGH AND AN EASTERLY WAVE

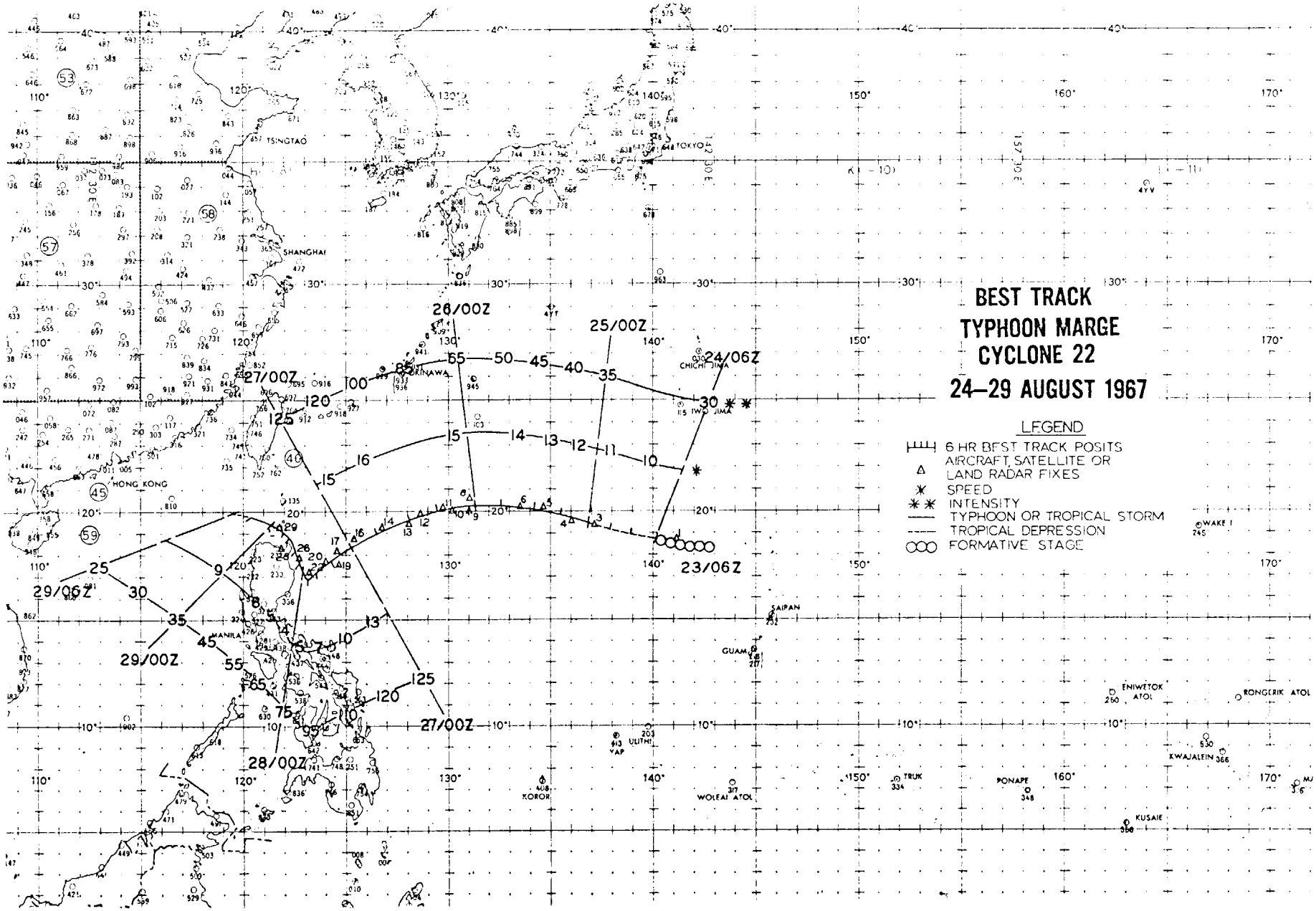
B. INITIAL SURFACE VORTEX

1. EMBEDDED VORTEX AT 230600Z
2. SURFACE PRESSURE LESS THAN 1004MB

C. 200MB FLOW ABOVE SURFACE VORTEX

1. INITIAL - EAST
2. UPON REACHING TYPHOON INTENSITY - SOUTH

III. FINAL DISPOSITION - DISSIPATED OVER WATER


BEST TRACK
TYPHOON MARGE
CYCLONE 22
24–29 AUGUST 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIPAN
GUAM
ULITHI
YAP
KOROR
WOLEAI ATOL
TRUK
PONAPE
KWAJALEIN
ENIWETOK ATOL
RONGERIK ATOL
WAKE I
KUSAIE
26/00Z
25/00Z
24/06Z
27/00Z
23/06Z
29/06Z
29/00Z
28/00Z
27/00Z

EYE FIXES CYCLONE 22

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	240030Z	18.6N 141.1E	54-UNK--	0370M	---	035	002	---	--/--	----			--
2	240633Z	18.5N 141.0E	SLTLS	STG C	DIA --	BNDS -							
3	242218Z	19.4N 137.1E	54-P-P05	0460M	036	035	002	---	--/--	----			--
4	250356Z	19.5N 136.0E	54-P-P05	0460M	048	050	997	---	--/--	----			F.B.
5	250940Z	20.1N 134.6E	VW-P-P10	0370M	035	035	993	---	--/--	CIRC	----	10	--
6	251510Z	20.2N 133.5E	VW-P-P10	700MB	055	---	---	---	--/--	CIRC	----	30	12
7	250520Z	20.0N 135.0E	SLTLS	STG C	DIA --	BNDS -							
8	261004Z	19.8N 128.6E	VW-P-P05	0300M	---	100	969	---	--/--	ELIP	NE-SW	15X08	--
9	262209Z	20.5N 131.0E	SLTLS	STG -	DIA --	BNDS -							
10	260025Z	20.0N 131.0E	54-P-P01	700MB	---	---	983	2954	16/--	CIRC	----	10	--
11	260412Z	20.0N 130.1E	54-P-P01	700MB	---	---	975	2895	18/--	ELIP	NE-SW	25X15	20
12	260527Z	20.1N 129.8E	54-P-P01	700MB	---	080	---	2883	18/--	ELIP	NE-SW	25X15	--
13	261245Z	19.5N 128.0E	VW-R-P10	700MB	---	---	---	---	--/--	----			--
14	261530Z	19.2N 126.7E	VW-R-P10	700MB	---	---	---	---	--/--	CIRC	----	06	30
15	260557Z	21.0N 129.0E	SLTLS	STG X	DIA 03	BNDS 5							
16	262200Z	18.7N 125.4E	54-P-P02	700MB	110	120	950	---	--/--	CIRC	----	19	--
17	270215Z	18.1N 124.5E	54-R-P--		---	---	---	---	--/--	----			--
18	270400Z	18.0N 124.5E	54-P-P01	700MB	150	150	937	2576	25/11	CIRC	----	15	20
19	270600Z	17.6N 124.6E	54-R-P--		---	---	---	---	--/--	----			--
20	270650Z	17.7N 124.0E	54-R-P--	700MB	---	---	---	---	--/--	----			--
21	270900Z	17.6N 123.8E	54-P-P01	700MB	125	150	947	2694	28/04	CIRC	----	25	10
22	271650Z	17.1N 123.2E	VW-R-P10	700MB	---	---	---	---	--/--	----			--
23	272150Z	17.2N 123.3E	VW-P-P05	700MB	---	090	974	2900	22/--	CIRC	----	30	--
24	280430Z	17.2N 122.9E	54-P-P02	700MB	060	045	983	2947	25/--	CIRC	----	45	--

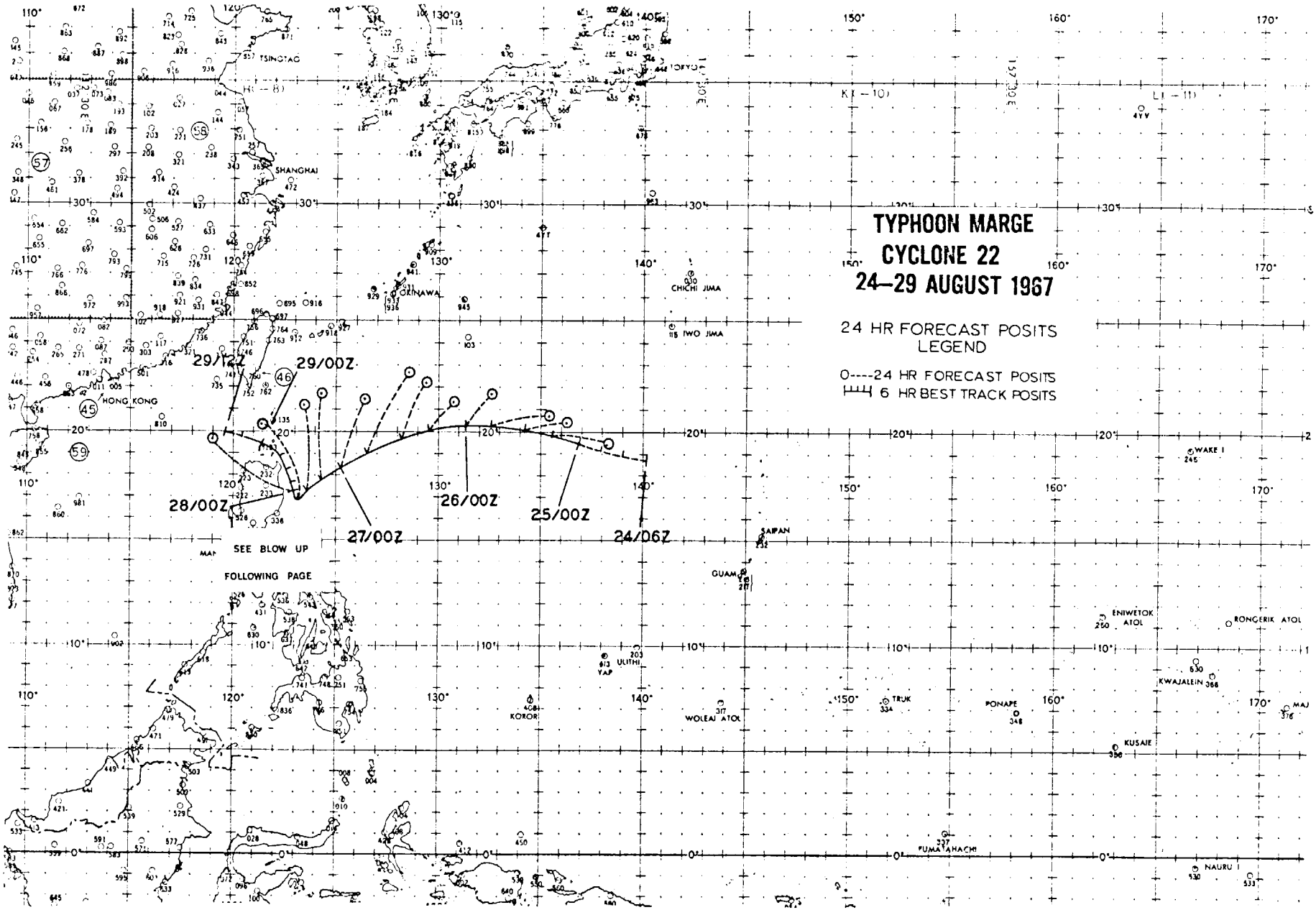
EYE FIXES CYCLONE 22

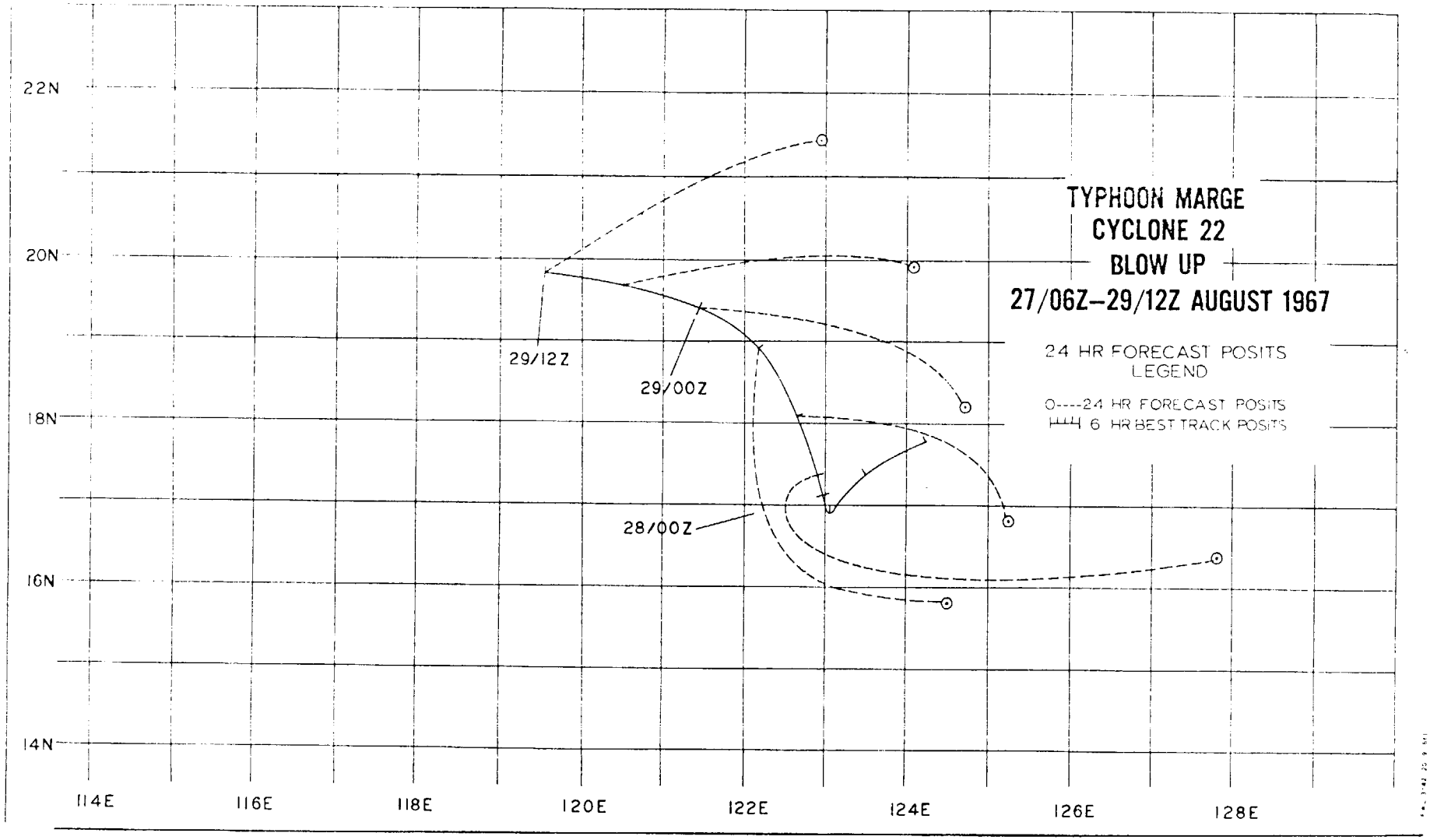
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	EYE FORM	ORIEN-TATION	EYE DIA	THKNS WALL CLOUD
25	270630Z	17.5N 123.0E	SLTLS	STG X	DIA 05	BNDS 3							
26	280845Z	17.8N 122.7E	54-UNK--	700MB	---	070	---	2951	18/--	----			--
27	281000Z	17.9N 122.8E	54-P-P01	700MB	050	075	985	2951	17/--	CIRC	----	30	--
28	281620Z	18.4N 121.9E	VW-P-P02	700MB	050	---	993	3022	15/08	----			N.F.B.
29	282210Z	19.2N 121.7E	VW-P-P02	700MB	---	050	991	3033	14/08	CIRC	----	10	--

TROPICAL CYCLONE 22 -- 08/24/0600Z TO 08/29/1200Z
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.
250000Z	19.4N	136.9E	--------	--------	--------
250600Z	19.8N	135.6E	102-0138	--------	--------
251200Z	20.1N	134.2E	084-0108	--------	--------
251800Z	20.3N	132.7E	084-0150	--------	--------
260000Z	20.2N	131.2E	044-0120	--------	--------
260600Z	20.0N	129.5E	043-0102	--------	--------
261200Z	19.7N	128.1E	027-0156	--------	--------
261800Z	19.2N	126.4E	030-0228	--------	--------
270000Z	18.4N	125.2E	019-0186	--------	--------
270600Z	17.8N	124.2E	002-0234	027-0372	--------
271200Z	17.4N	123.5E	358-0228	012-0456	--------
271800Z	16.9N	123.1E	332-0222	008-0534	--------
280000Z	17.2N	123.0E	302-0264	002-0420	--------
280600Z	17.4N	122.8E	101-0294	346-0414	012-0492
281200Z	18.1N	122.7E	120-0162	336-0360	--------
281800Z	18.9N	122.2E	145-0228	314-0324	006-0594
290000Z	19.3N	121.4E	109-0192	286-0366	--------

AVERAGE 24 HOUR ERROR - 0188 MI.
AVERAGE 48 HOUR ERROR - 0405 MI.
AVERAGE 72 HOUR ERROR - 0543 MI.


TYPHOON MARGE
CYCLONE 22
24–29 AUGUST 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
29/12Z
29/00Z
28/00Z
27/00Z
26/00Z
25/00Z
24/06Z
SEE BLOW UP
FOLLOWING PAGE
TSINGTAO
SHANGHAI
HONG KONG
OKINAWA
TOKYO
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
WAKE I
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
KUSAIE
NAURU I
PONAPE
TRUK
WOLEAI ATOL
KOROR
ULITHI
YAP
FUMA HACHI


TYPHOON MARGE
CYCLONE 22
BLOW UP
27/06Z–29/12Z AUGUST 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
29/12Z
29/00Z
28/00Z
22N
20N
18N
16N
14N
114E
116E
118E
120E
122E
124E
126E
128E

TROPICAL CYCLONE 24 - 08/27/0600Z TO 08/30/1200Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 14
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 03
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 1026 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 981MBS AT 282035Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2953M. AT 291000Z
3. MAXIMUM SURFACE WIND - 070 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 340 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - LOW LEVEL SURGE INTO CYCLONIC CIRCULATION FROM THE SOUTH WITH SUBSEQUENT DIVERGENCE AT 200MB LEVEL

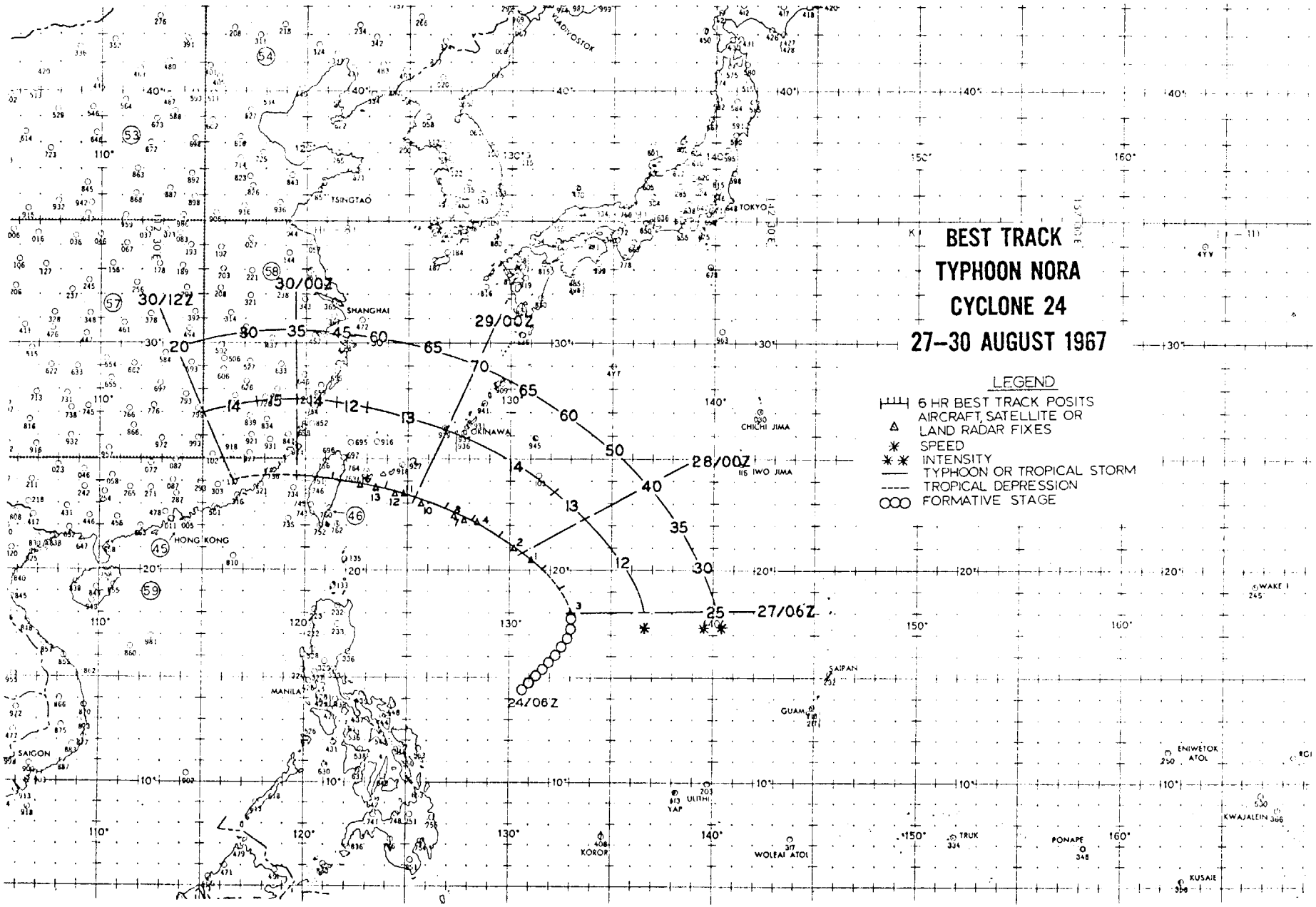
B. INITIAL SURFACE VORTEX

1. JUNCTION VORTEX AT 240600Z
2. SURFACE PRESSURE LESS THAN 1003MB

C. 200MB FLOW ABOVE SURFACE VORTEX

1. INITIAL - SOUTHEAST
2. UPON REACHING TYPHOON INTENSITY - EAST

III. FINAL DISPOSITION - DISSIPATED OVER LAND


BEST TRACK
TYPHOON NORA
CYCLONE 24
27–30 AUGUST 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
30/12Z
30/00Z
29/00Z
28/00Z
27/06Z
24/06Z
SHANGHAI
TSINGTAO
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
KWAJALEIN
ENIWETOK ATOL
WAKE I

EYE FIXES CYCLONE 24

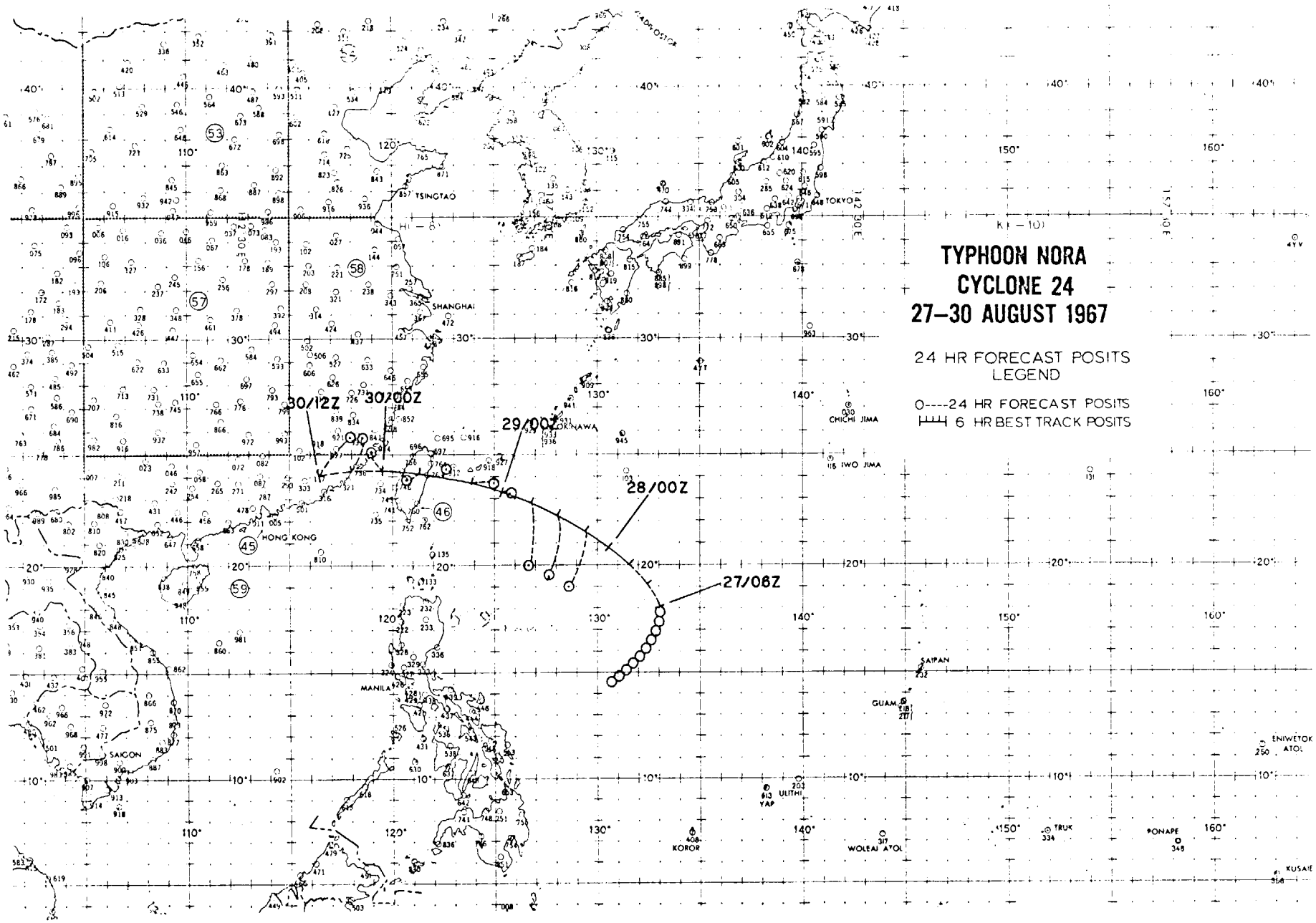
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	EYE FORM	ORIEN-TATION	EYE DIA	THKNS WALL CLOUD
1	272100Z	20.4N 131.0E	54-P-P03	700MB	030	030	997	3057	11/10	----			--
2	280230Z	20.9N 130.2E	54-P-P03	700MB	047	045	991	3005	14/--	CONC		30-15	--
3	270630Z	18.0N 133.0E	SLTLS	STG A	DIA -- BNDS -								
4	281012Z	22.1N 128.4E	VW-R-F10	0360M	---	---	---	---	--/--	----			--
5	281045Z	22.1N 128.6E	VW-P-P03	0290M	055	070	987	---	--/--	CIRC	----	20	--
6	281200Z	22.1N 128.3E	VW-R-P--	0980M	---	---	---	---	--/--	----			--
7	281400Z	22.2N 127.8E	VW-R-P--	700MB	---	---	---	---	--/--	----			--
8	281600Z	22.4N 127.2E	VW-P-P03	700MB	040	---	---	2963	16/--	CIRC	----	10	--
9	281500Z	22.2N 127.5E	VW-R-P--	700MB	---	---	---	---	--/--	----			--
10	282035Z	22.9N 125.6E	VW-P-P05	700MB	045	---	981	2984	16/--	CIRC	----	20	--
11	290130Z	23.4N 124.7E	LND RDR		---	---	---	---	--/--	----			--
12	290325Z	23.5N 124.3E	54-P-P02	700MB	050	045	993	3008	14/--	----			F.B.
13	290900Z	23.7N 123.3E	LND RDR		---	---	---	---	--/--	----			--
14	291000Z	23.7N 123.1E	LND RDR		---	---	---	---	--/--	----			--
15	291000Z	23.8N 123.1E	54-P-P02	700MB	050	045	982	2953	17/--	CIRC	----	05	--
16	291045Z	23.8N 122.6E	LND RDR		---	---	---	---	--/--	----			--
17	291145Z	24.0N 122.5E	LND RDR		---	---	---	---	--/--	----			--
18	291400Z	24.0N 122.2E	LND RDR		---	---	---	---	--/--	----			--

TROPICAL CYCLONE 24 -- 08/27/0600Z TO 08/30/1200Z

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.
271800Z	20.0N	131.5E	--------	--------	--------
280000Z	20.7N	130.5E	--------	--------	--------
280600Z	21.5N	129.4E	196-0150	--------	--------
281200Z	22.2N	128.1E	187-0162	--------	--------
281800Z	22.7N	126.7E	177-0162	--------	--------
290000Z	23.2N	125.3E	090-0024	--------	--------
290600Z	23.6N	123.9E	090-0060	--------	--------
291200Z	23.9N	122.6E	012-0030	--------	--------
291800Z	24.1N	121.4E	249-0030	--------	--------
300000Z	24.3N	119.5E	330-0048	--------	--------

AVERAGE 24 HOUR ERROR - 0083 MI.
AVERAGE 48 HOUR ERROR - ---- MI.
AVERAGE 72 HOUR ERROR - ---- MI.


TYPHOON NORA
CYCLONE 24
27–30 AUGUST 1967
24 HR FORECAST POSITS
LEGEND
0----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
30/12Z
30/00Z
29/00Z
28/00Z
27/06Z
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
ULITHI
YAP
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
KUSAIE

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

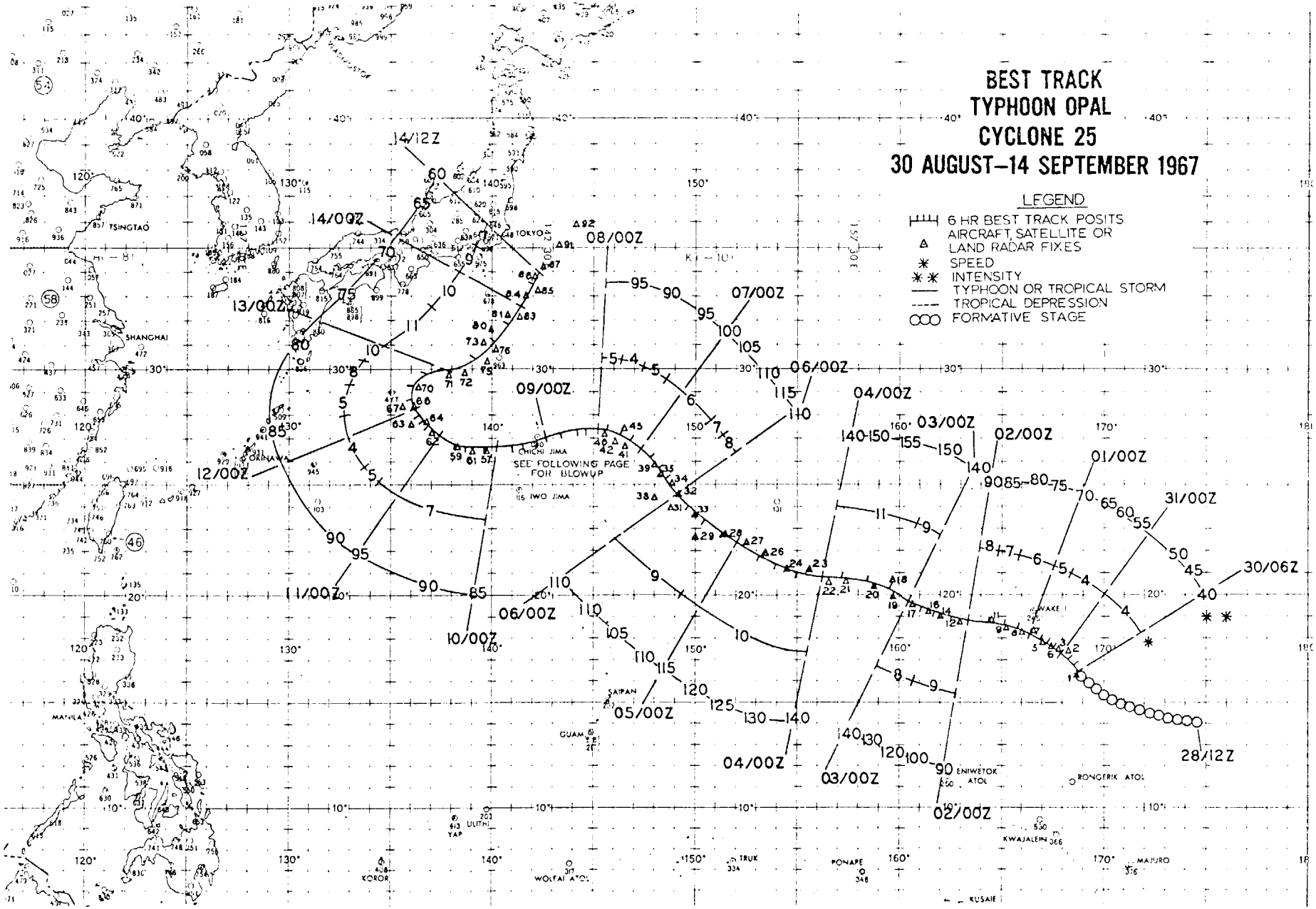
B. INITIAL SURFACE VORTEX

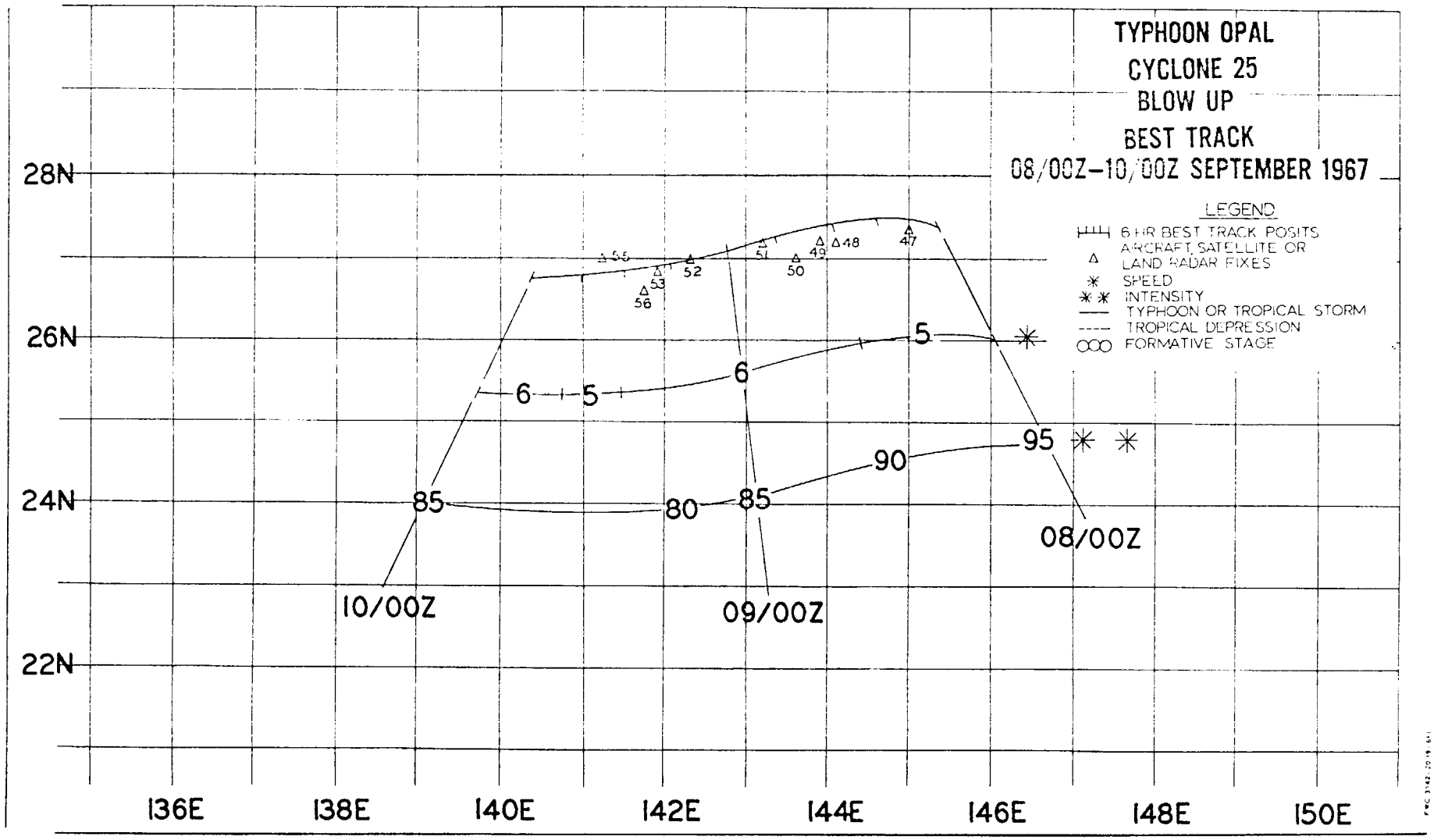
1. EMBEDDED VORTEX AT 281200Z
2. SURFACE PRESSURE LESS THAN 1008MB

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
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
MANILA
WAKE I
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
TRUK
PONAPE
KUSAIE
WOLEAI ATOL
ULITHI
YAP
KOROR
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


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

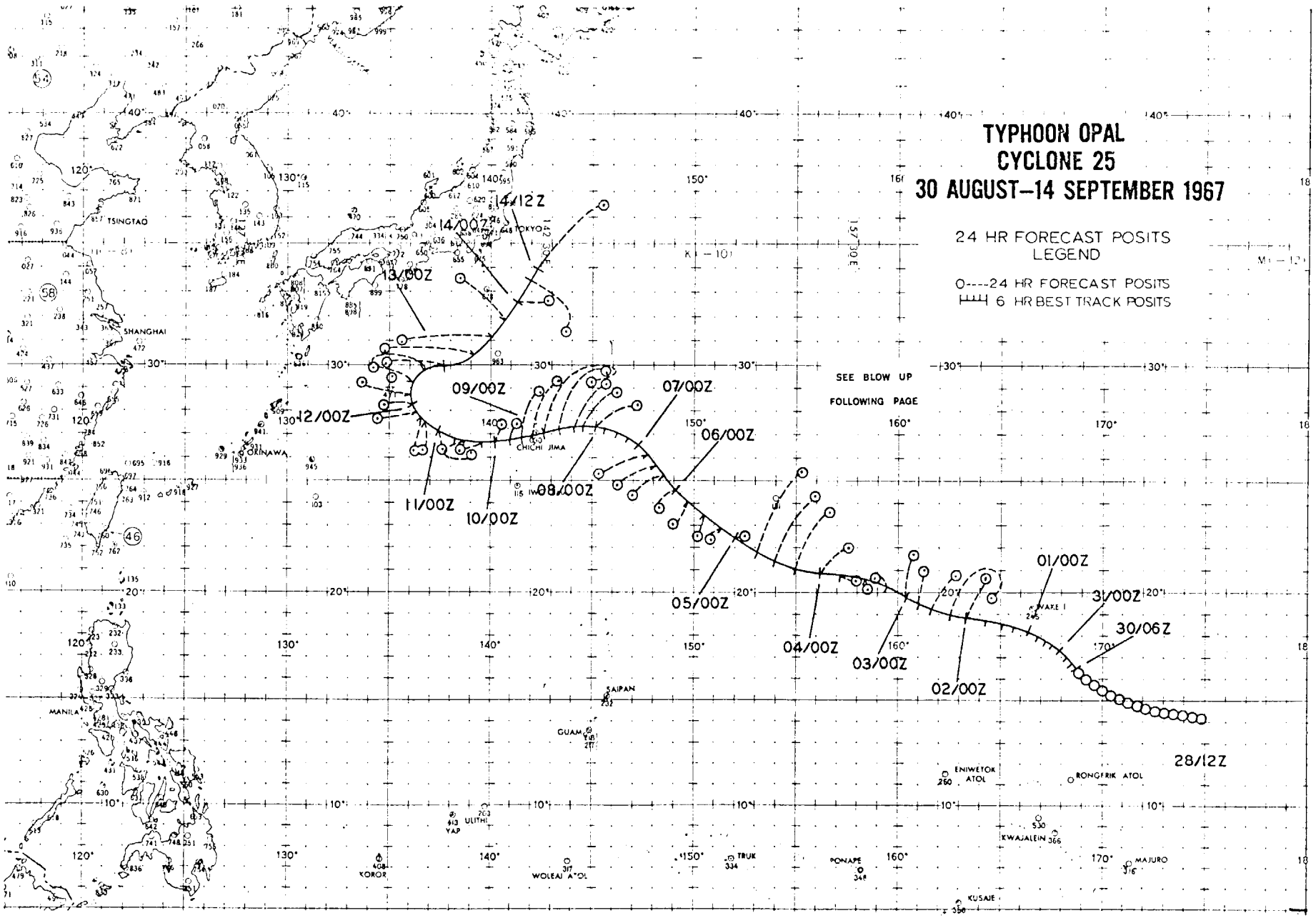
POSITION AND FORECAST VERIFICATION DATA

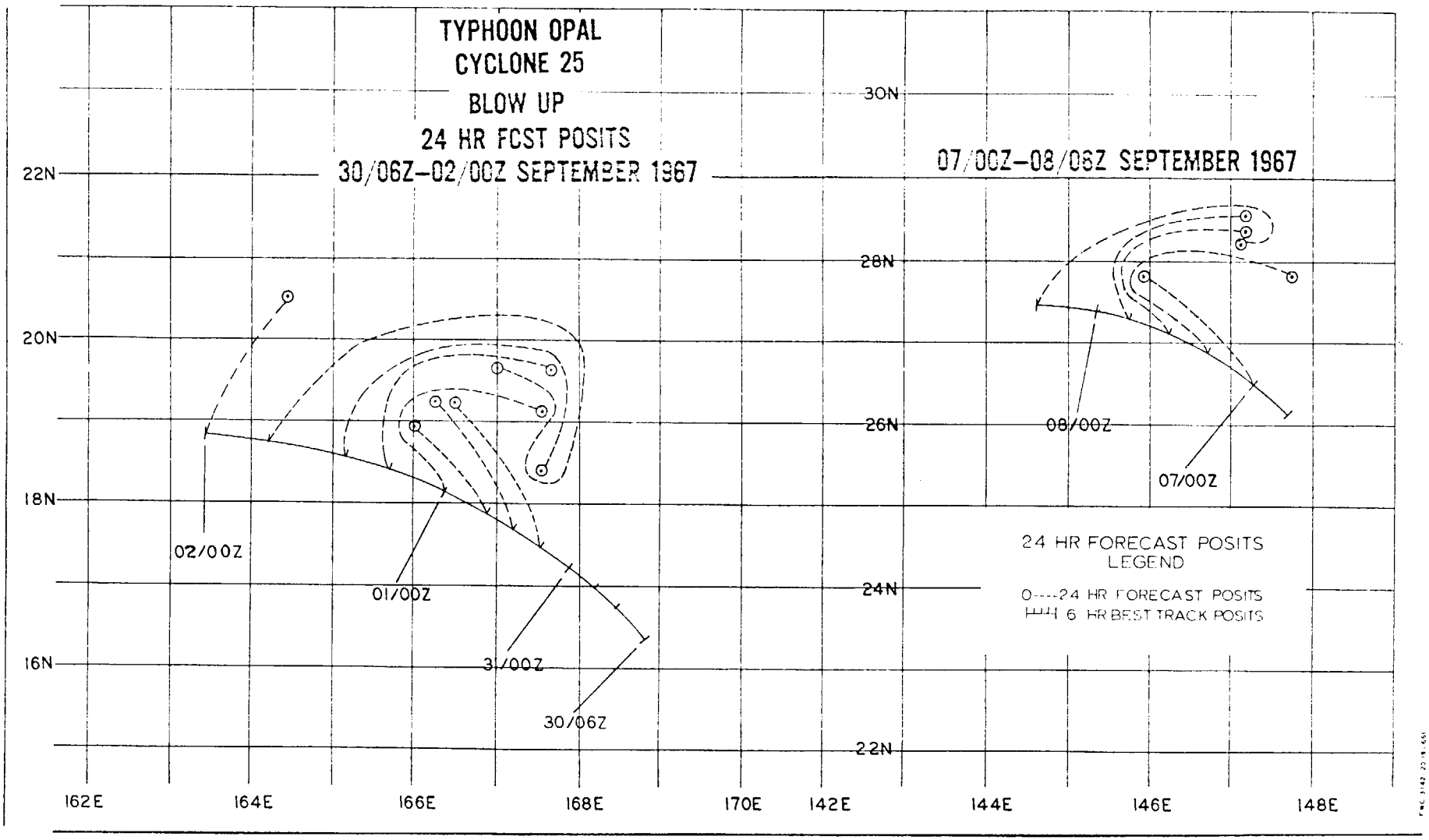
DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DIST.	48 HR. ERROR DEG. DIST.	72 HR. ERROR DEG. DIST.
300600Z	16.4N	168.8E	--------	--------	--------
301200Z	16.7N	168.5E	--------	--------	--------
301800Z	17.0N	168.2E	--------	--------	--------
310000Z	17.3N	167.9E	--------	--------	--------
310600Z	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

TROPICAL CYCLONE 27 - 09/06/0600Z TO 09/13/1800Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 31
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 14
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 1674 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 939MBS AT 120300Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2566M. AT 120300Z
3. MAXIMUM SURFACE WIND - 110 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 350 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - A COLD CORE LOW BECOMING WARM CORE AFTER DEVELOPMENT OF DIVERGENCE AT 200MB

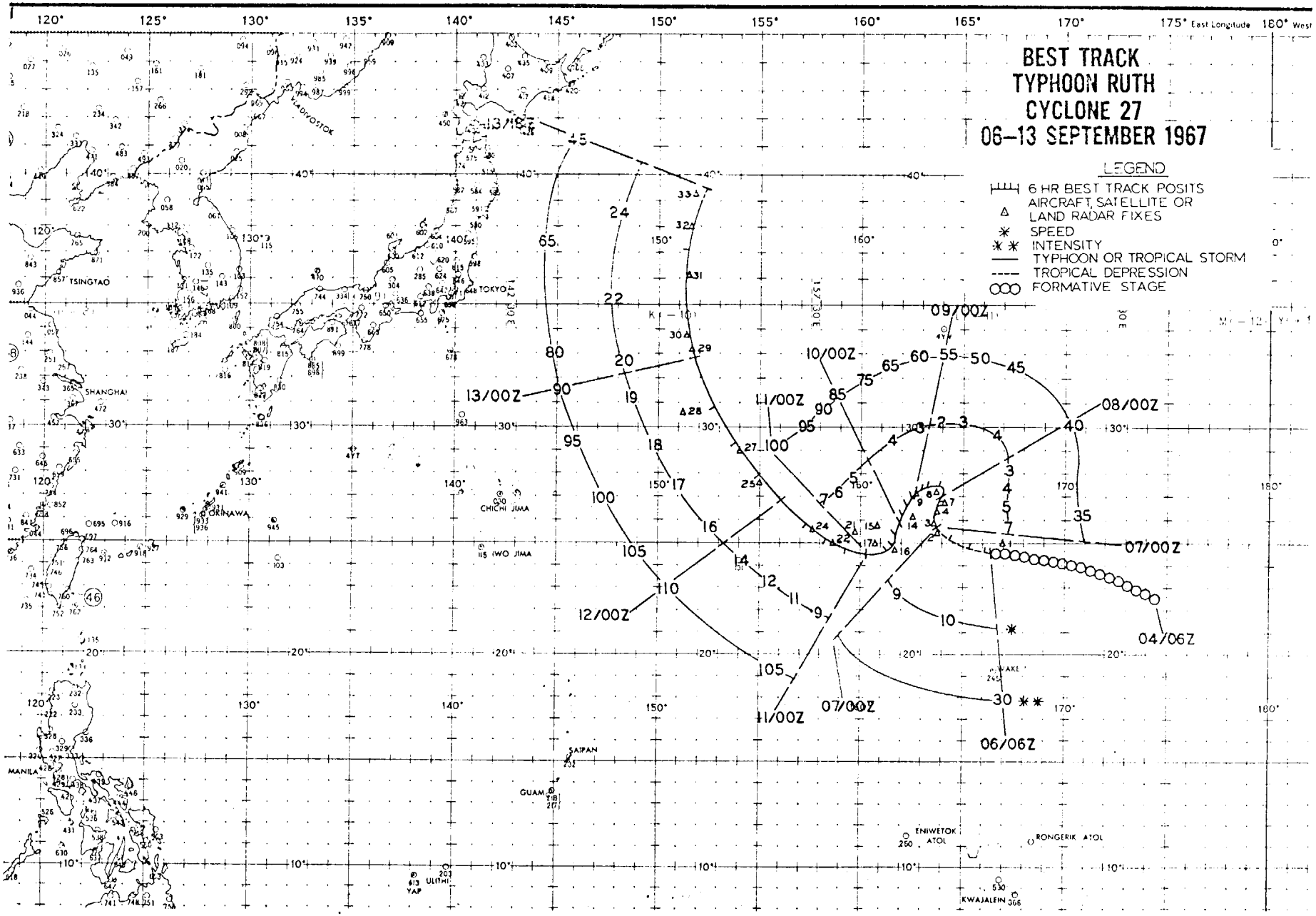
B. INITIAL SURFACE VORTEX

1. COLD VORTEX AT 040600
2. SURFACE PRESSURE LESS THAN 1010MB

C. 200MB FLOW ABOVE SURFACE VORTEX

1. INITIAL - SOUTH
2. UPON REACHING TYPHOON INTENSITY - NORTHWEST

III. FINAL DISPOSITION - BECAME EXTRATROPICAL


BEST TRACK
TYPHOON RUTH
CYCLONE 27
06–13 SEPTEMBER 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
175° East Longitude
180° West
VLADIVOSTOK
TSINGTAO
TOKYO
SHANGHAI
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
MANILA
ULITHI
YAP
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
WAKE
13/18Z
13/00Z
12/00Z
11/00Z
10/00Z
09/00Z
08/00Z
07/00Z
06/06Z
04/06Z

EYE FIXES CYCLONE 27

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	062222Z	25.5N 163.8E	54-P-P08	0300M	043	035	999	---	--/--	CIRC	----	20	--
2	070124Z	25.5N 163.0E	SLTLS	STG C	DIA -- BNDS -								
3	070211Z	25.9N 163.6E	54-P-P10	0300M	043	040	995	---	--/--	CIRC	----	05	--
4	070905Z	26.4N 163.8E	VW-P-P05	0290M	020	035	995	---	--/--	CIRC	----	15	04
5	071532Z	26.4N 163.6E	VW-P-P05	0310M	028	030	995	---	--/--	CIRC	----	40	--
6	072100Z	26.7N 164.0E	54-P-P10	0330M	033	035	996	---	--/--	----			F.B.
7	080305Z	27.2N 163.7E	54-P-P05	0310M	038	035	994	---	--/--	CIRC	----	12	--
8	080958Z	27.1N 163.4E	VW-P-P05	700MB	022	---	---	3021	15/--	CIRC	----	20	--
9	082127Z	27.0N 163.0E	54-P-P05	0350M	038	045	992	---	--/--	CIRC	----	06	--
10	090300Z	27.1N 162.8E	54-P-P10	0450M	050	050	988	---	--/--	CIRC	----	08	--
11	091000Z	26.6N 162.6E	VW-R-P20		---	---	---	---	--/--	----			--
12	091110Z	26.7N 162.2E	VW-P-P05	700MB	038	---	980	2941	18/--	CIRC	----	12	--
13	091525Z	26.1N 162.6E	VW-R-P15	700MB	040	---	---	3040	13/--	CIRC	----	08	09
14	100214Z	25.2N 162.0E	SLTLS	STG X	DIA 03 BNDS 3								
15	100330Z	25.7N 161.9E	54-P-P10	700MB	---	065	962	2755	15/--	CONC		12-06	--
16	100900Z	24.8N 161.8E	VW-R-P30		---	---	---	---	--/--	----			--
17	101300Z	25.0N 161.7E	VW-R-P--	700MB	---	---	---	---	--/--	----			--
18	101515Z	24.8N 161.8E	VW-P-P05	700MB	068	---	990	2750	17/--	CIRC	----	18	06
19	110300Z	24.9N 160.0E	54-P-P10	700MB	075	075	963	2710	14/--	CIRC	----	20	--
20	110304Z	25.5N 159.8E	SLTLS	STG X	DIA 03 BNDS 4								
21	110900Z	25.0N 158.8E	VW-R-F25		---	---	---	---	--/--	----			--
22	111547Z	25.6N 157.6E	VW-R-P02	700MB	050	---	---	3048	--/--	CIRC	----	15	08
23	112200Z	26.4N 156.3E	54-P-P05	700MB	110	110	945	2603	16/--	CIRC	----	20	--
24	120300Z	27.6N 155.0E	54-P-P10	700MB	115	120	939	2566	19/--	CIRC	----	18	--

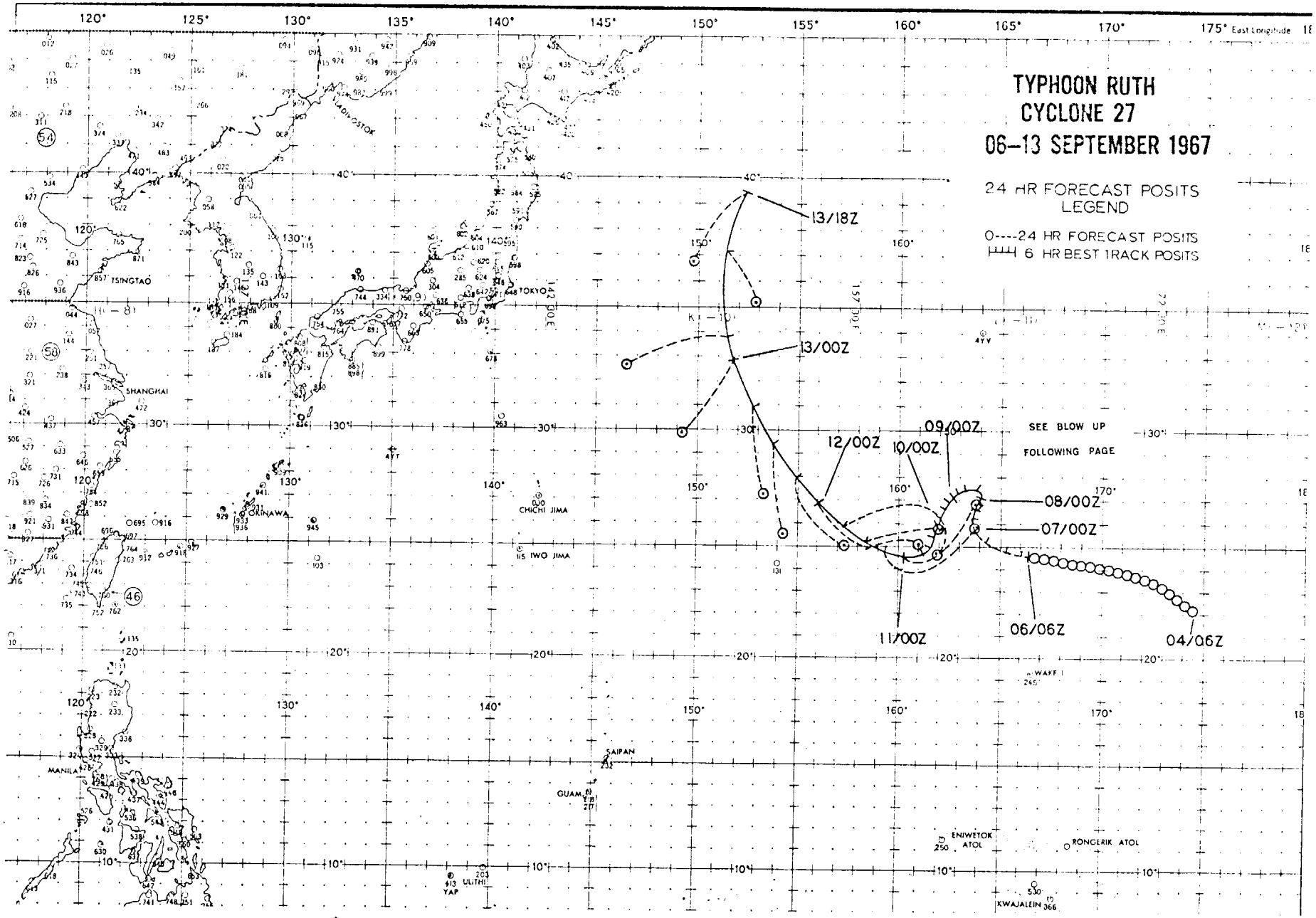
EYE FIXES CYCLONE 27

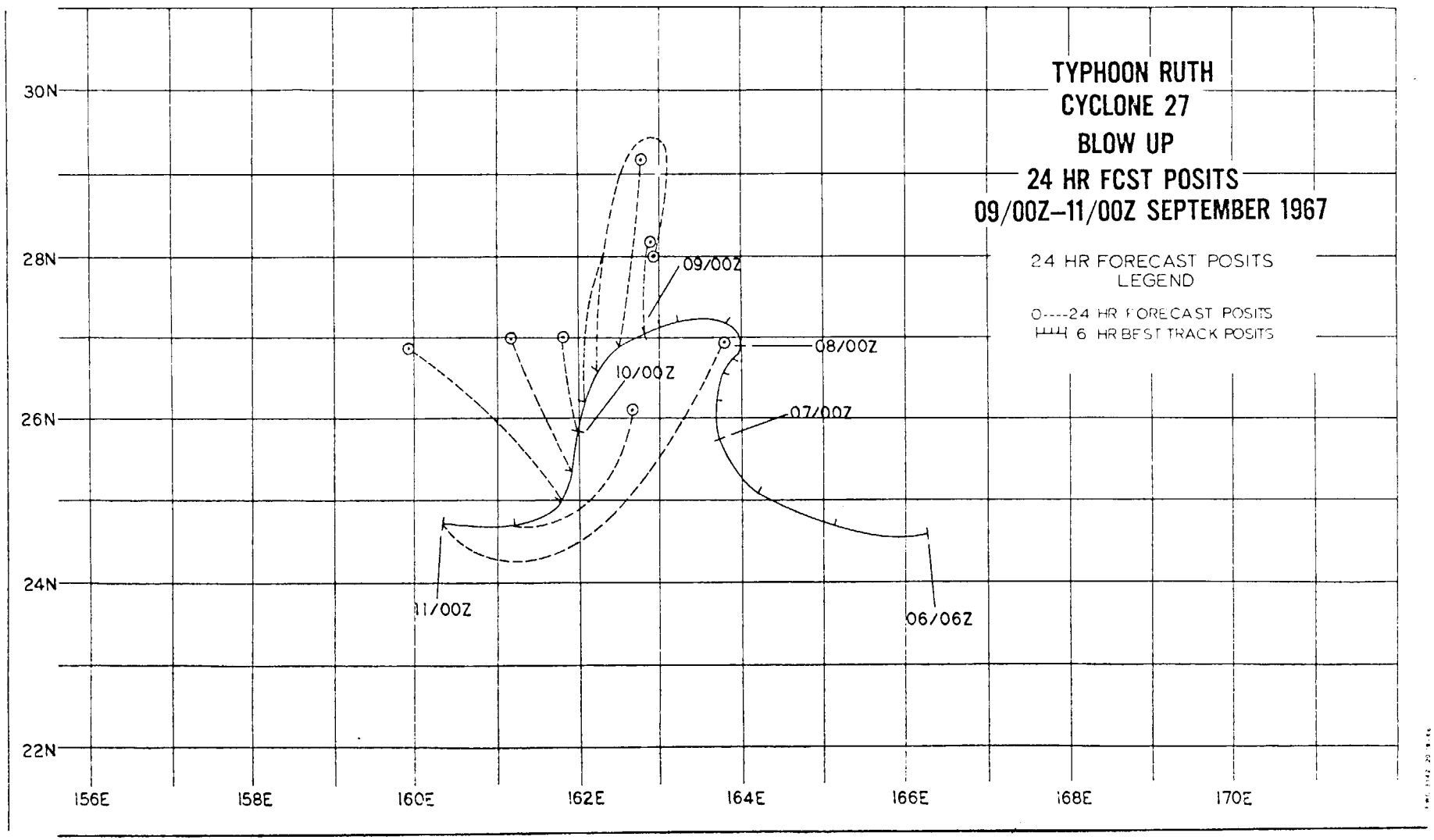
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	EYE FORM	ORIEN-TATION	EYE DIA	THKNS WALL CLOUD
25	120500Z	28.0N 154.5E	SLTLS	STG X	DIA 04	BNDS 4							
26	121000Z	29.0N 154.0E	VW-R-P03	0400M	---	---	---	---	--/--	CIRC	----	14	05
27	121610Z	30.5N 151.1E	VW-R-P25	700MB	---	---	---	3112	--/--	CIRC	----	22	--
28	130155Z	33.2N 151.6E	54-P-P02	700MB	080	100	964	2771	19/--	CIRC	----	20	--
29	130250Z	33.0N 151.5E	SLTLS	STG X	DIA 03	BNDS 4							
30	130355Z	33.9N 151.4E	54-P-P02	700MB	085	100	962	2743	18/--	CIRC	----	30	--
31	131000Z	36.1N 151.5E	VW-R-P05	1360M	---	---	---	---	--/--	CIRC	----	30	--
32	131510Z	38.2N 151.8E	VW-R-P10	1270M	---	---	---	---	--/--	CIRC	----	50	10

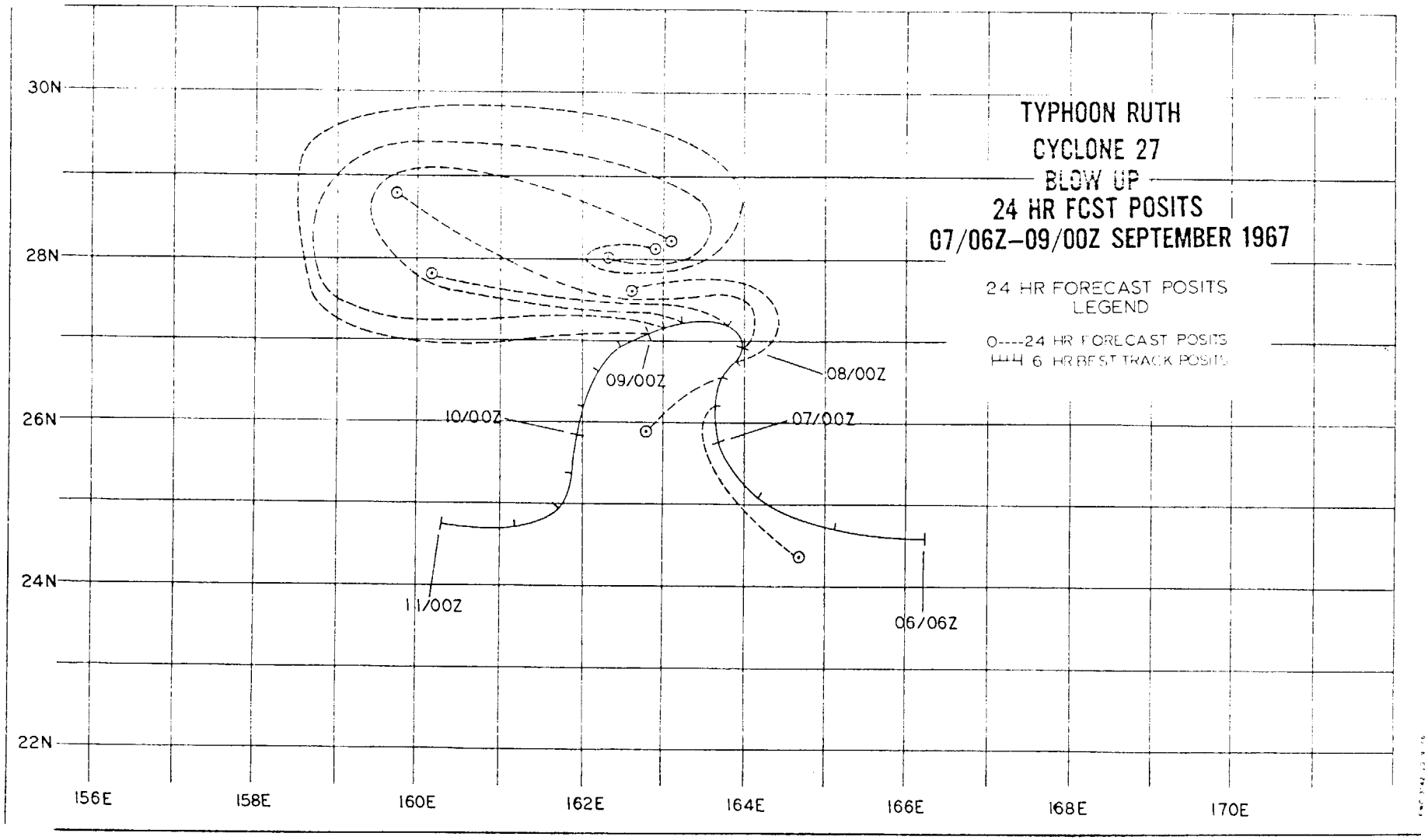
TROPICAL CYCLONE 27 -- 09/06/0600Z TO 09/13/1800Z
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DIST.	48 HR. ERROR DEG. DIST.	72 HR. ERROR DEG. DIST.
070600Z	26.2N	163.7E	156-0114	--------	--------
071200Z	26.5N	163.8E	233-0066	--------	--------
071800Z	26.7N	163.9E	309-0084	--------	--------
080000Z	26.9N	164.0E	297-0246	--------	--------
080600Z	27.2N	163.7E	280-0186	--------	--------
081200Z	27.2N	163.3E	354-0060	--------	--------
081800Z	27.2N	163.0E	323-0060	--------	--------
090000Z	27.1N	162.8E	006-0066	296-0354	--------
090600Z	26.9N	162.5E	005-0144	312-0318	--------
091200Z	26.6N	162.2E	024-0090	000-0228	--------
091800Z	26.2N	162.0E	024-0114	356-0222	--------
100000Z	25.8N	161.9E	360-0072	007-0258	--------
100600Z	25.4N	161.9E	336-0102	005-0354	336-0486
101200Z	24.9N	161.8E	316-0144	007-0306	--------
101800Z	24.7N	161.3E	039-0102	011-0318	006-0480
110000Z	24.7N	160.4E	054-0222	341-0150	--------
110600Z	24.9N	159.4E	077-0252	347-0132	025-0582
111200Z	25.2N	158.2E	082-0204	346-0102	--------
111800Z	25.8N	157.1E	103-0258	074-0192	039-0474
120000Z	26.7N	155.8E	109-0294	066-0378	--------
120600Z	28.0N	154.6E	140-0234	090-0480	080-0096
121200Z	29.4N	153.7E	174-0234	117-0378	--------
121800Z	31.0N	152.6E	172-0228	132-0498	125-0372
130000Z	32.7N	151.8E	220-0216	138-0558	--------
130600Z	34.8N	151.3E	241-0282	164-0594	114-0648
131200Z	37.1N	151.5E	151-0132	186-0618	--------
131800Z	39.5N	152.3E	217-0198	194-0672	161-0846

AVERAGE 24 HOUR ERROR - 0163 MI.
AVERAGE 48 HOUR ERROR - 0355 MI.
AVERAGE 72 HOUR ERROR - 0498 MI.


TYPHOON RUTH
CYCLONE 27
06–13 SEPTEMBER 1967
24 HR FORECAST POSITS
LEGEND
0----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
SEE BLOW UP
FOLLOWING PAGE
13/18Z
13/00Z
12/00Z
10/00Z
09/00Z
08/00Z
07/00Z
06/06Z
04/06Z
11/00Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
MANILA
SAIPAN
GUAM
YAP
ULITHI
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
WAKE
120°
125°
130°
135°
140°
145°
150°
155°
160°
165°
170°
175° East Longitude
40°
30°
20°
10°


TYPHOON RUTH
CYCLONE 27
BLOW UP
24 HR FCST POSITS
09/00Z–11/00Z SEPTEMBER 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
30N
28N
26N
24N
22N
156E
158E
160E
162E
164E
166E
168E
170E
09/00Z
08/00Z
10/00Z
07/00Z
11/00Z
06/06Z


TYPHOON RUTH
CYCLONE 27
BLOW UP
24 HR FCST POSITS
07/06Z–09/00Z SEPTEMBER 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
30N
28N
26N
24N
22N
156E
158E
160E
162E
164E
166E
168E
170E
09/00Z
08/00Z
10/00Z
07/00Z
11/00Z
06/06Z

TROPICAL CYCLONE 28 - 09/08/1800Z TO 09/22/0600Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 55
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 33
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 4499 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 930MBS AT 151130Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2478M. AT 142225Z
3. MAXIMUM SURFACE WIND - 125 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 500 MI

II. DEVELOPMENT

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

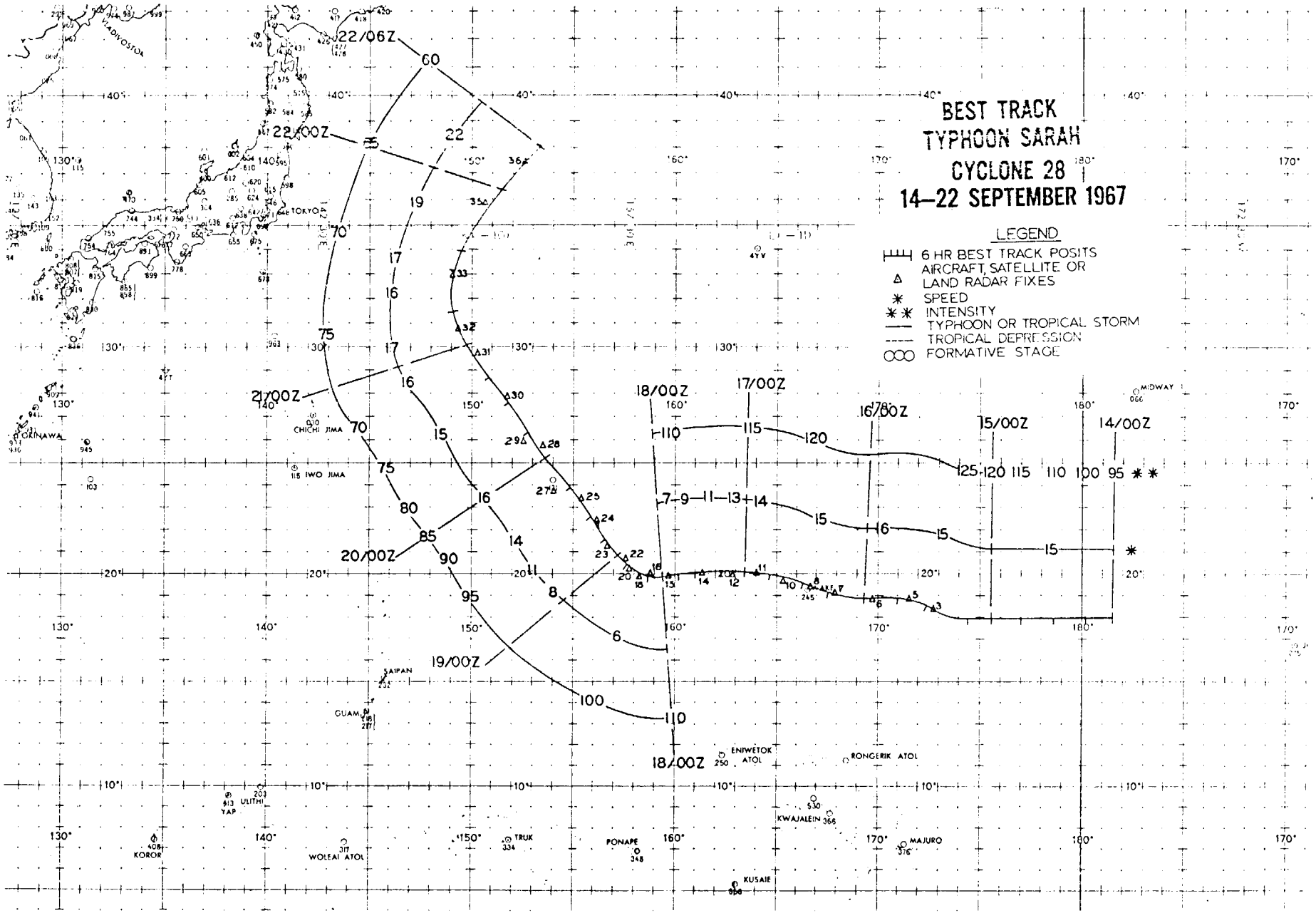
B. INITIAL SURFACE VORTEX

1. JUNCTION VORTEX AT 071800Z
2. SURFACE PRESSURE LESS THAN 1007MB

C. 200MB FLOW ABOVE SURFACE VORTEX

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

III. FINAL DISPOSITION - BECAME EXTRATROPICAL


BEST TRACK
TYPHOON SARAH
CYCLONE 28
14–22 SEPTEMBER 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
22/06Z
22/00Z
21/00Z
20/00Z
19/00Z
18/00Z
17/00Z
16/00Z
15/00Z
14/00Z
VLADIVOSTOK
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
ULITHI
YAP
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
MIDWAY

EYE FIXES CYCLONE 28

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	OBS 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	142225Z	17.9N 176.0E	54-P-P05	700MB	090	050	931	2486	18/--	CONC		40-10	08
2	150330Z	18.0N 174.3E	54-P-P05	700MB	090	100	933	2502	17/--	CIRC	----	10	10
3	151030Z	17.8N 173.2E	VW-R-P10		---	---	---	---	--/--	----			--
4	151130Z	18.4N 172.8E	VW-P-P05	700MB	090	---	930	---	17/--	CIRC	----	28	05
5	151625Z	18.9N 171.5E	VW-P-P05	700MB	075	---	936	2541	17/--	ELIP	N-S	27X20	--
6	152200Z	18.8N 169.7E	54-P-P02	700MB	---	060	940	2576	23/--	CIRC	----	18	15
7	160533Z	19.1N 167.9E	54-P-P02	700MB	085	090	934	2506	18/--	CIRC	----	15	--
8	161050Z	19.4N 166.6E	VW-R-P10	0420M	---	---	---	---	--/--	----			--
9	161110Z	19.4N 166.6E	VW-R-P05	0410M	040	035	---	---	--/--	CONC		40-12	06
10	161510Z	19.7N 165.3E	VW-R-P05	700MB	070	---	---	---	--/--	CONC		40-12	--
11	162130Z	20.0N 164.0E	54-P-P02	700MB	090	080	946	2615	16/--	CONC		45-18	15
12	170221Z	20.0N 162.5E	SLTLS	STG -	DIA --	BNDS -							
13	170300Z	20.0N 162.8E	54-P-P02	700MB	112	100	939	2548	18/--	CONC		40-15	--
14	171020Z	20.0N 161.2E	VW-P-P05	700MB	090	---	934	2619	17/10	CONC		28-14	05
15	171515Z	20.1N 160.3E	VW-P-P10	700MB	060	---	---	2606	13/--	CIRC	----	30	05
16	172200Z	20.0N 159.7E	54-P-P03	700MB	080	060	948	2606	17/--	CIRC	----	20	10
17	180345Z	20.0N 158.9E	54-P-P03	700MB	085	075	946	2600	15/--	CIRC	----	15	15
18	181000Z	20.1N 158.4E	VW-R-P--	700MB	---	---	---	---	--/--	----			--
19	181100Z	20.0N 158.3E	VW-P-P03	700MB	---	070	946	2631	16/--	CIRC	----	18	07
20	181300Z	20.0N 158.0E	VW-R-P--	700MB	---	---	---	---	--/--	----			--
21	181520Z	20.2N 157.7E	VW-P-P05	700MB	080	---	---	2643	18/--	CIRC	----	14	08
22	182200Z	20.6N 157.4E	54-P-P02	700MB	083	065	952	2658	18/--	CIRC	----	18	--
23	190300Z	21.3N 156.8E	54-P-P05	700MB	080	100	957	2704	12/--	----			--
24	191030Z	22.3N 156.0E	VW-R-P--	700MB	---	---	---	---	--/--	----			--

EYE FIXES CYCLONE 28

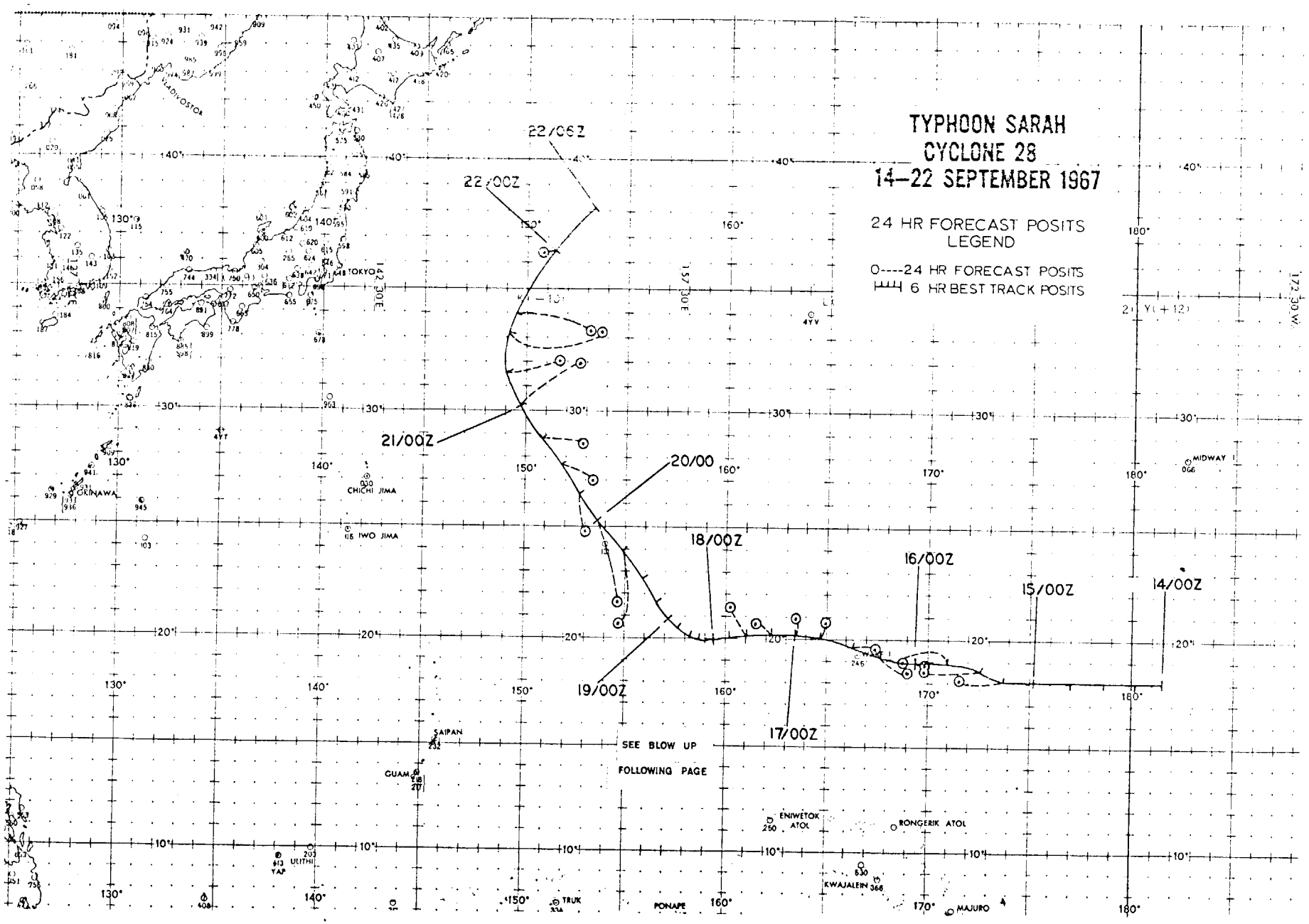
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	EYE FORM	ORIEN-TATION	EYE DIA	THKNS WALL CLOUD
25	191050Z	22.4N 156.0E	VW-P-P03	700MB	090	---	958	2728	18/--	CIRC	----	22	05
26	191515Z	23.3N 155.3E	VW-P-P03	700MB	065	---	958	2756	18/--	CIRC	----	16	05
27	192224Z	24.4N 154.0E	54-P-P02	700MB	070	075	965	2783	20/--	ELIP	NE-SW	40X20	--
28	200228Z	25.7N 153.3E	54-P-P02	700MB	070	070	970	2835	18/--	CIRC	----	40	--
29	200258Z	26.0N 152.5E	SLTLS	STG X	DIA 04	BNDS 4							
30	201510Z	27.8N 151.8E	VW-P-P10	0310M	080	060	966	---	--/--	CIRC	----	25	05
31	202216Z	29.7N 150.1E	54-P-P10	700MB	090	070	964	2789	20/--	CIRC	----	20	--
32	210153Z	30.5N 149.5E	SLTLS	STG X	DIA 03	BNDS 3							
33	210335Z	30.9N 149.2E	54-P-P03	700MB	080	070	963	2789	20/--	CIRC	----	30	--
34	211200Z	33.0N 149.0E	VW-P-P05	0240M	070	070	968	---	--/--	----			--
35	212200Z	35.9N 150.7E	54-P-P05	700MB	080	065	967	2929	21/--	----			--
36	220323Z	37.5N 152.3E	54-P-P05	700MB	075	065	977	---	19/--	----			--

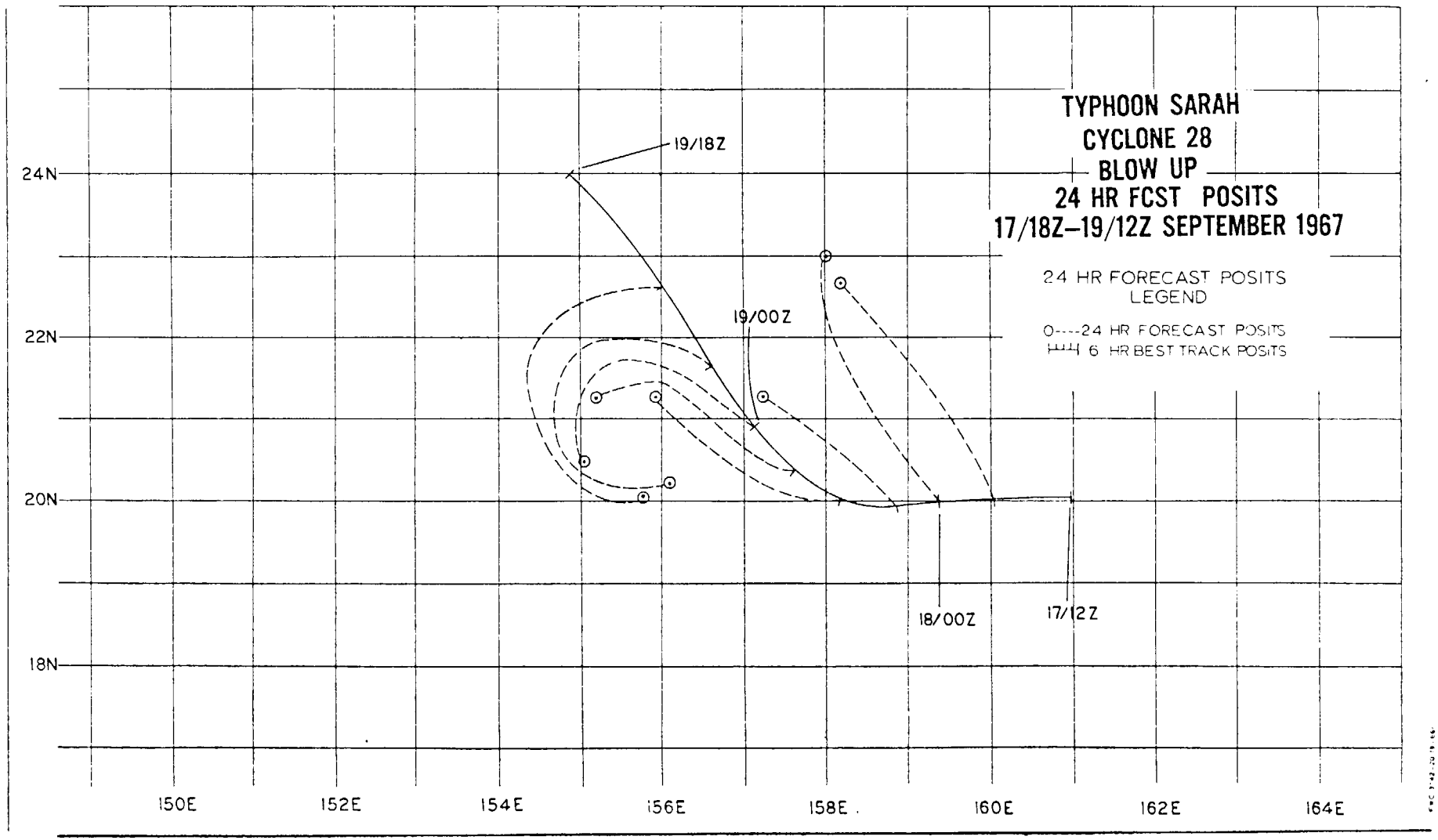
TROPICAL CYCLONE 28 -- 09/14/1200Z TO 09/22/0600Z

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.
141200Z	18.0N	178.5E	--------	--------	--------
141800Z	18.0N	177.0E	--------	--------	--------
150000Z	18.0N	175.5E	--------	--------	--------
150600Z	18.1N	173.9E	--------	--------	--------
151200Z	18.6N	172.5E	268-0144	--------	--------
151800Z	18.9N	171.0E	270-0132	--------	--------
160000Z	18.9N	169.3E	120-0030	--------	--------
160600Z	19.1N	167.8E	114-0072	--------	--------
161200Z	19.5N	166.3E	097-0048	303-0126	--------
161800Z	19.9N	164.8E	016-0042	314-0132	--------
170000Z	20.1N	163.4E	000-0048	040-0138	--------
170600Z	20.1N	162.1E	308-0036	092-0162	--------
171200Z	20.1N	161.0E	329-0078	035-0144	--------
171800Z	20.0N	160.1E	327-0186	000-0258	343-0336
180000Z	20.0N	159.4E	336-0192	360-0318	--------
180600Z	19.9N	158.8E	313-0120	341-0306	011-0186
181200Z	20.0N	158.2E	301-0144	345-0372	--------
181800Z	20.4N	157.6E	293-0132	335-0516	000-0570
190000Z	20.9N	157.2E	259-0114	340-0516	--------
190600Z	21.6N	156.6E	196-0084	286-0246	351-0540
191200Z	22.6N	155.9E	183-0150	275-0264	--------
191800Z	23.9N	154.9E	180-0204	262-0240	001-0726
200000Z	25.2N	153.7E	164-0222	212-0270	--------
200600Z	26.4N	152.8E	172-0090	180-0318	248-0294
201200Z	27.6N	151.9E	120-0078	175-0390	--------
201800Z	28.8N	150.9E	097-0096	176-0438	232-0336
210000Z	30.1N	149.7E	055-0180	166-0438	--------
210600Z	31.5N	149.0E	078-0138	131-0150	180-0534
211200Z	33.1N	149.0E	089-0234	114-0246	--------
211800Z	34.8N	149.8E	118-0204	107-0306	190-0696
220000Z	36.5N	151.2E	226-0012	090-0438	--------
220600Z	38.2N	153.1E	240-0102	115-0306	154-0228

AVERAGE 24 HOUR ERROR - 0118 MI.
AVERAGE 48 HOUR ERROR - 0293 MI.
AVERAGE 72 HOUR ERROR - 0444 MI.


TYPHOON SARAH
CYCLONE 28
14–22 SEPTEMBER 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
22/06Z
22/00Z
21/00Z
20/00
19/00Z
18/00Z
17/00Z
16/00Z
15/00Z
14/00Z
SEE BLOW UP
FOLLOWING PAGE
TOKYO
CHICHI JIMA
IWO JIMA
OKINAWA
SAIPAN
GUAM
YAP
ULITHI
TRUK
PONAPE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
MIDWAY
VLADIVOSTOK


TYPHOON SARAH
CYCLONE 28
BLOW UP
24 HR FCST POSITS
17/18Z–19/12Z SEPTEMBER 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
19/18Z
19/00Z
18/00Z
17/12Z
24N
22N
20N
18N
150E
152E
154E
156E
158E
160E
162E
164E

TROPICAL CYCLONE 31 - 09/18/0600Z TO 09/24/1200Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 26
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 18
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 1356 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 960MBS AT 211015Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2752M. AT 210330Z
3. MAXIMUM SURFACE WIND - 095 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 360 MI

II. DEVELOPMENT

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

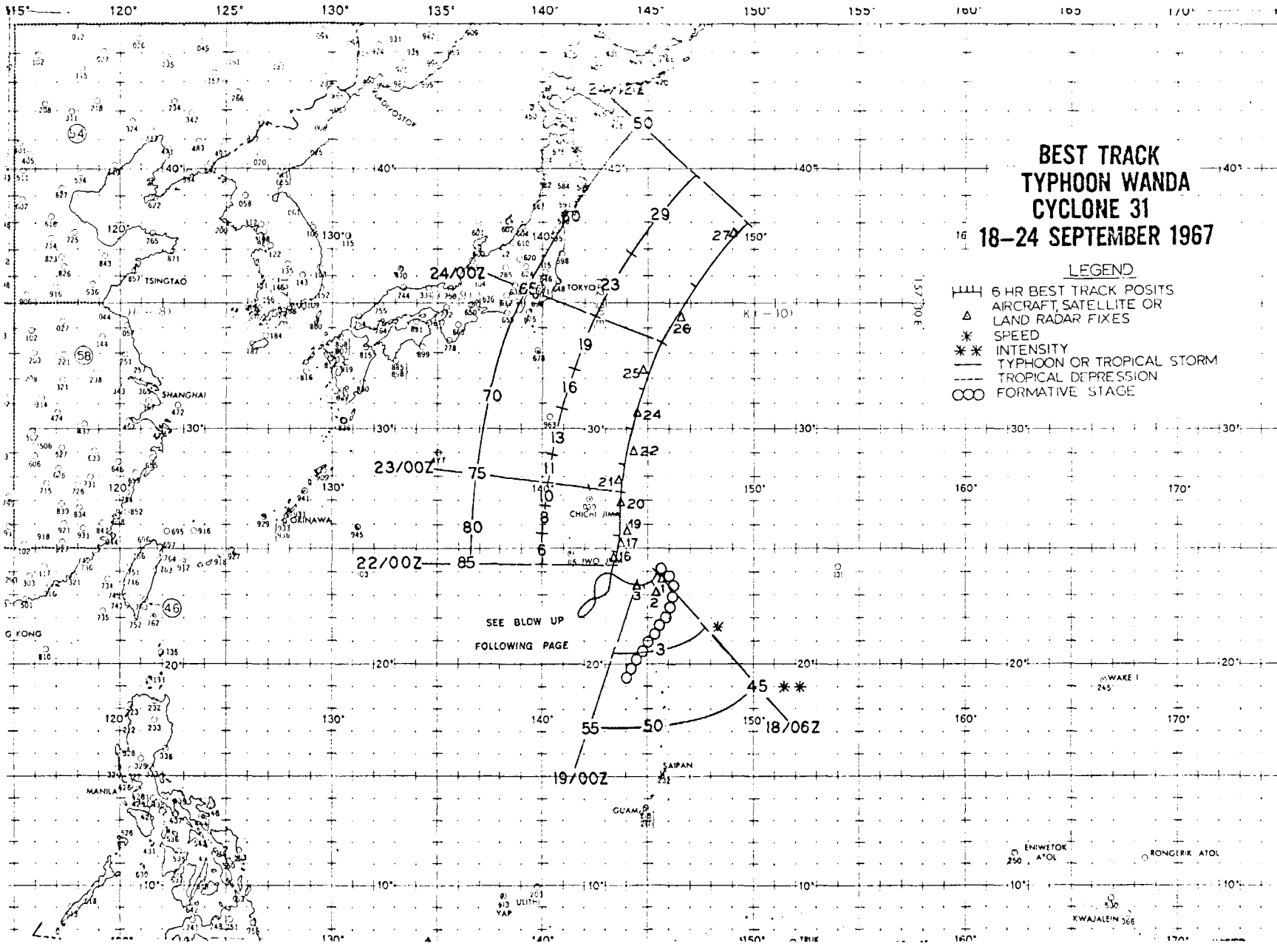
B. INITIAL SURFACE VORTEX

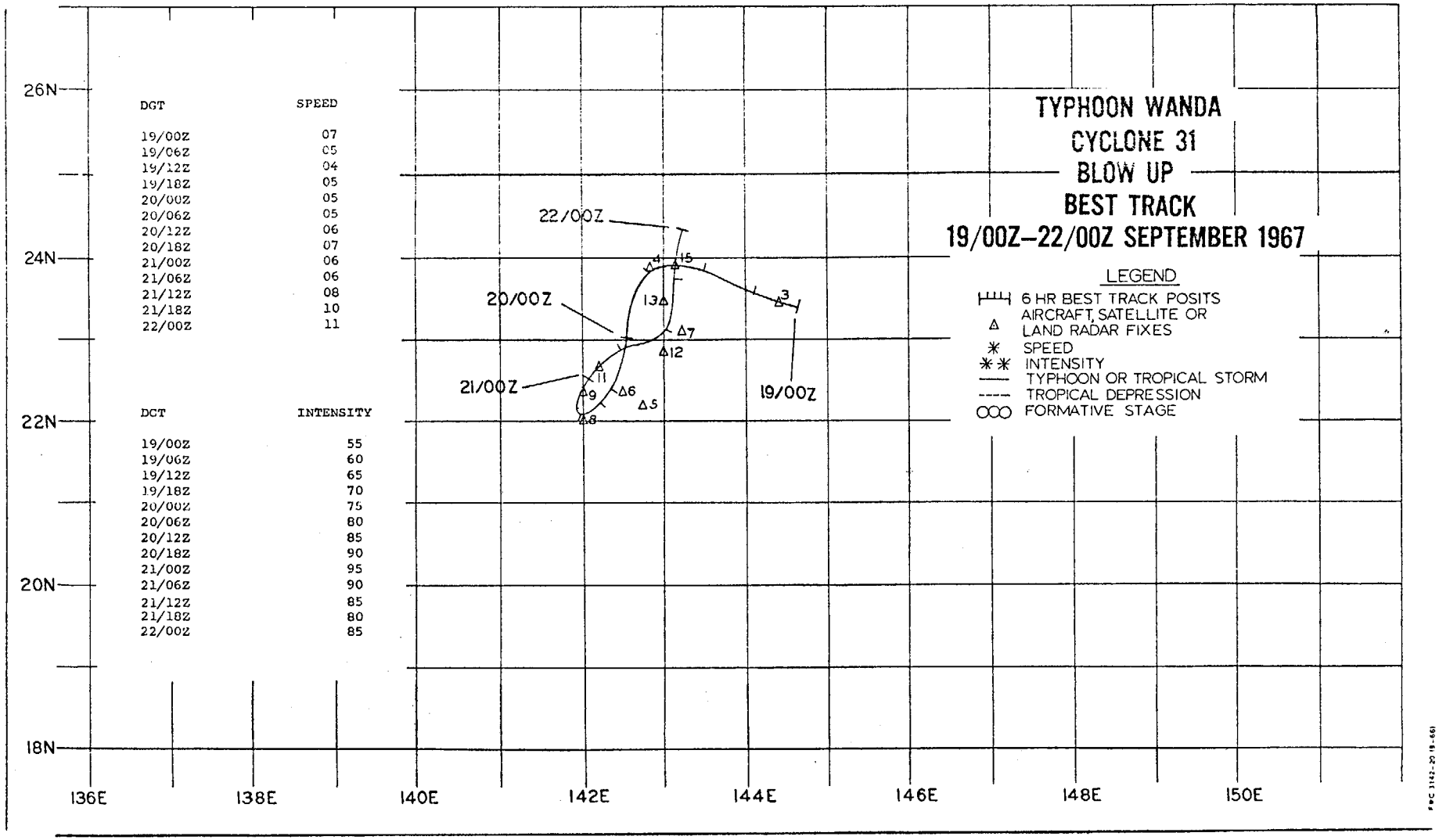
1. JUNCTION VORTEX AT 150000Z
2. SURFACE PRESSURE LESS THAN 1003MB

C. 200MB FLOW ABOVE SURFACE VORTEX

1. INITIAL - WEST
2. UPON REACHING TYPHOON INTENSITY - SOUTHWEST

III. FINAL DISPOSITION - BECAME EXTRATROPICAL


BEST TRACK
TYPHOON WANDA
CYCLONE 31
18–24 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 BLOW UP FOLLOWING PAGE
24/00Z
23/00Z
22/00Z
19/00Z
18/06Z
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
MANILA
WAKE I
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
YAP
ULITHI
TRUK



DGT	SPEED
19/00Z	07
19/06Z	05
19/12Z	04
19/18Z	05
20/00Z	05
20/06Z	05
20/12Z	06
20/18Z	07
21/00Z	06
21/06Z	06
21/12Z	08
21/18Z	10
22/00Z	11

DGT	INTENSITY
19/00Z	55
19/06Z	60
19/12Z	65
19/18Z	70
20/00Z	75
20/06Z	80
20/12Z	85
20/18Z	90
21/00Z	95
21/06Z	90
21/12Z	85
21/18Z	80
22/00Z	85

EYE FIXES CYCLONE 31

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	180305Z	23.9N 145.6E	54-P-P05	700MB	040	030	992	3033	--/--	----			F.B.
2	182119Z	23.1N 145.4E	54-P-P03	700MB	030	040	987	2996	14/--	CIRC	----	05	--
3	190322Z	23.5N 144.4E	54-P-P03	700MB	050	040	984	2963	14/--	----			F.B.
4	191602Z	23.9N 142.8E	VW-P-P05	0360M	080	075	976	---	--/--	CIRC	----	15	03
5	192201Z	22.2N 142.8E	54-P-P02	700MB	042	065	972	2844	15/--	CIRC	----	30	--
6	200258Z	22.0N 142.0E	SLTLS	STG X	DIA 04	BNDS 4							
7	200358Z	22.4N 142.5E	54-P-P02	700MB	070	070	969	2810	16/--	CIRC	----	45	--
8	201020Z	23.1N 143.3E	VW-P-P10	0290M	050	060	966	---	--/--	ELIP	NW-SE	30X20	04
9	201540Z	22.3N 142.0E	VW-P-P03	700MB	050	---	986	2772	14/--	ELIP	NW-SE	40X25	05
10	202200Z	22.3N 142.0E	54-P-P03	700MB	070	065	963	2780	17/--	CIRC	----	30	--
11	210330Z	22.5N 142.3E	54-P-P03	700MB	074	065	962	2752	17/--	CIRC	----	20	--
12	210344Z	22.5N 142.0E	SLTLS	STG X	DIA 03	BNDS 3							
13	211015Z	22.8N 143.0E	VW-P-P03	700MB	070	---	960	2824	15/--	CIRC	----	40	--
14	211600Z	23.5N 143.0E	VW-P-F03	700MB	080	---	964	2830	14/--	CIRC	----	40	--
15	212200Z	23.9N 143.2E	54-P-P02	700MB	076	055	969	2795	14/--	CIRC	----	50	--
16	220244Z	24.5N 143.0E	SLTLS	STG X	DIA 03	BNDS 4							
17	220332Z	24.5N 143.4E	54-P-P02	700MB	077	060	965	2765	13/--	CIRC	----	50	--
18	221015Z	25.1N 143.8E	VW-P-P10	0290M	060	065	966	---	--/--	CIRC	----	40	10
19	221515Z	25.7N 144.0E	VW-P-P05	700MB	085	---	---	---	17/--	CIRC	----	30	05
20	222200Z	27.0N 143.8E	54-P-P03	700MB	067	060	964	2792	17/--	ELIP	NE-SW	40X20	10
21	230334Z	27.5N 148.5E	SLTLS	STG X	DIA 03	BNDS 3							
22	230415Z	27.9N 143.6E	54-P-P03	700MB	068	070	964	2783	17/12	ELIP	NE-SW	50X10	--
23	230932Z	29.0N 144.3E	VW-P-P05	0290M	050	045	972	---	--/--	CIRC	----	50	10
24	231529Z	30.7N 144.5E	VW-R-P05	0400M	040	035	---	---	--/--	ELIP	N-S	48X27	12

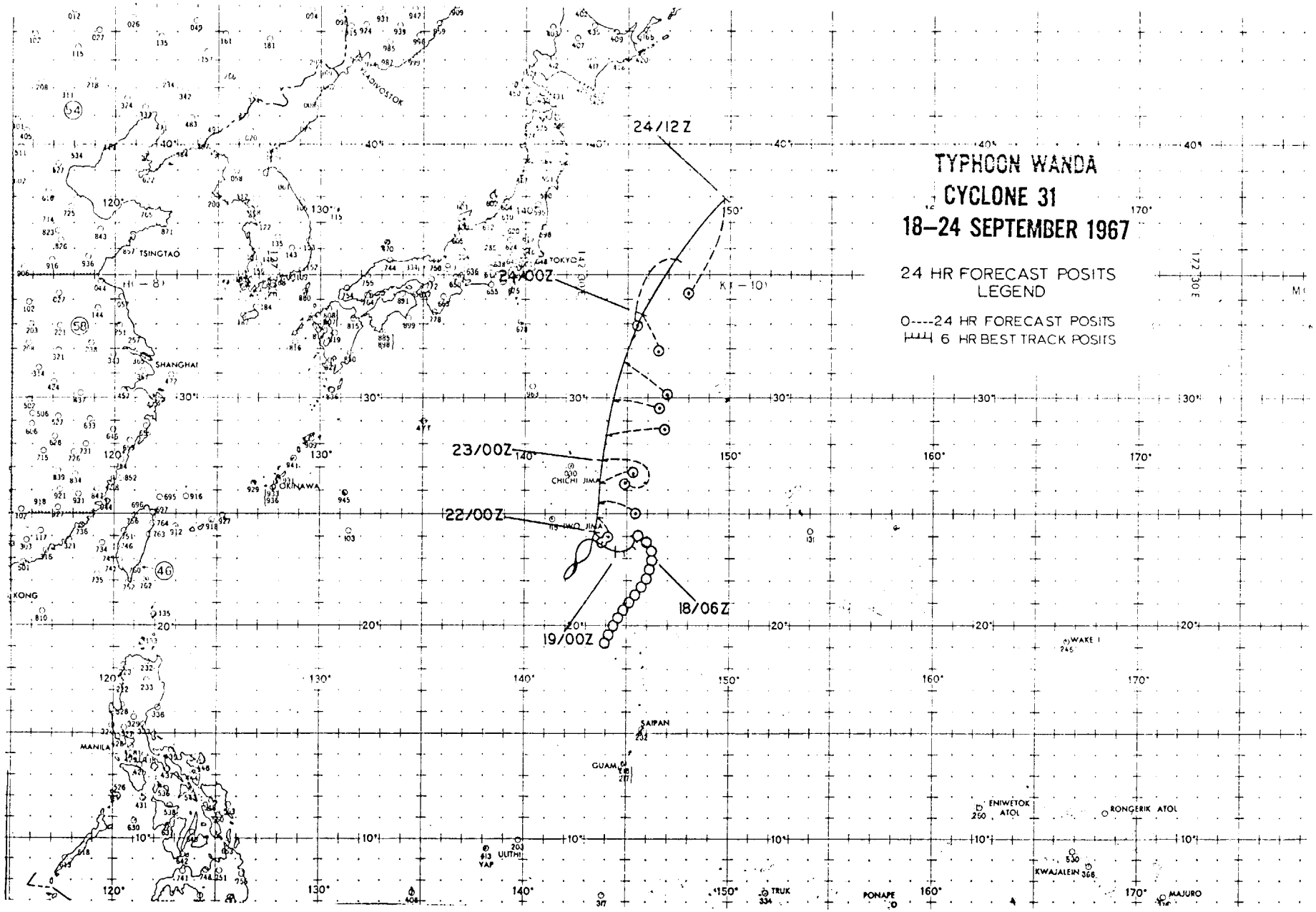
EYE FIXES CYCLONE 31

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	232129Z	32.3N 144.9E	54-P-P05	700MB	120	100	967	2841	20/--	ELIP	NE-SW	30X20	--
26	240345Z	34.5N 146.4E	54-P-P05	700MB	095	085	966	2819	19/--	ELIP	NW-SE	30X25	--
27	241030Z	37.5N 149.2E	VW-P-P10	0300M	050	035	968	---	--/--	CIRC	----	17	--

TROPICAL CYCLONE 31 -- 09/18/0600Z TO 09/24/1200Z
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.
180600Z	23.9N	145.4E	--------	--------	--------
181200Z	23.6N	145.2E	--------	--------	--------
181800Z	23.4N	144.9E	--------	--------	--------
190000Z	23.4N	144.6E	--------	--------	--------
190600Z	23.5N	144.1E	357-0162	--------	--------
191200Z	23.8N	143.5E	004-0180	--------	--------
191800Z	23.7N	142.8E	010-0222	--------	--------
200000Z	23.0N	142.6E	090-0156	--------	--------
200600Z	22.4N	142.4E	010-0174	002-0360	--------
201200Z	22.3N	142.1E	012-0216	004-0402	--------
201800Z	22.1N	142.0E	004-0228	002-0498	--------
210000Z	22.5N	142.1E	056-0246	081-0186	--------
210600Z	22.8N	142.5E	041-0102	010-0342	358-0474
211200Z	23.1N	143.1E	043-0258	008-0354	--------
211800Z	23.7N	143.1E	104-0024	358-0246	009-0732
220000Z	24.3N	143.3E	158-0030	049-0390	--------
220600Z	24.8N	143.5E	165-0048	041-0258	024-0438
221200Z	25.4N	143.6E	104-0090	046-0474	--------
221800Z	26.3N	143.7E	073-0078	086-0150	024-0294
230000Z	27.3N	143.8E	134-0072	081-0186	--------
230600Z	28.4N	144.0E	086-0144	113-0162	054-0354
231200Z	29.9N	144.3E	101-0114	118-0204	--------
231800Z	31.6N	144.6E	128-0144	107-0216	097-0276
240000Z	33.4N	145.5E	154-0096	142-0246	--------
240600Z	35.5N	147.1E	210-0168	108-0282	146-0276
241200Z	38.0N	149.8E	201-0234	150-0276	--------

AVERAGE 24 HOUR ERROR - 0144 MI.
AVERAGE 48 HOUR ERROR - 0290 MI.
AVERAGE 72 HOUR ERROR - 0406 MI.


TYPHOON WANDA
CYCLONE 31
18–24 SEPTEMBER 1967
24 HR FORECAST POSITS
LEGEND
0----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
24/12Z
24/00Z
23/00Z
22/00Z
19/00Z
18/06Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
MANILA
YAP
ULITHI
TRUK
PONAPE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
WAKE I

TROPICAL CYCLONE 32 - 09/28/0600Z TO 10/06/0000Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 32
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 07
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 1872 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 961MBS AT 041510Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2768M. AT 050400Z
3. MAXIMUM SURFACE WIND - 080 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 500 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - A COLD CORE LOW BECOMING WARM CORE AFTER DEVELOPMENT OF DIVERGENCE AT 200MB

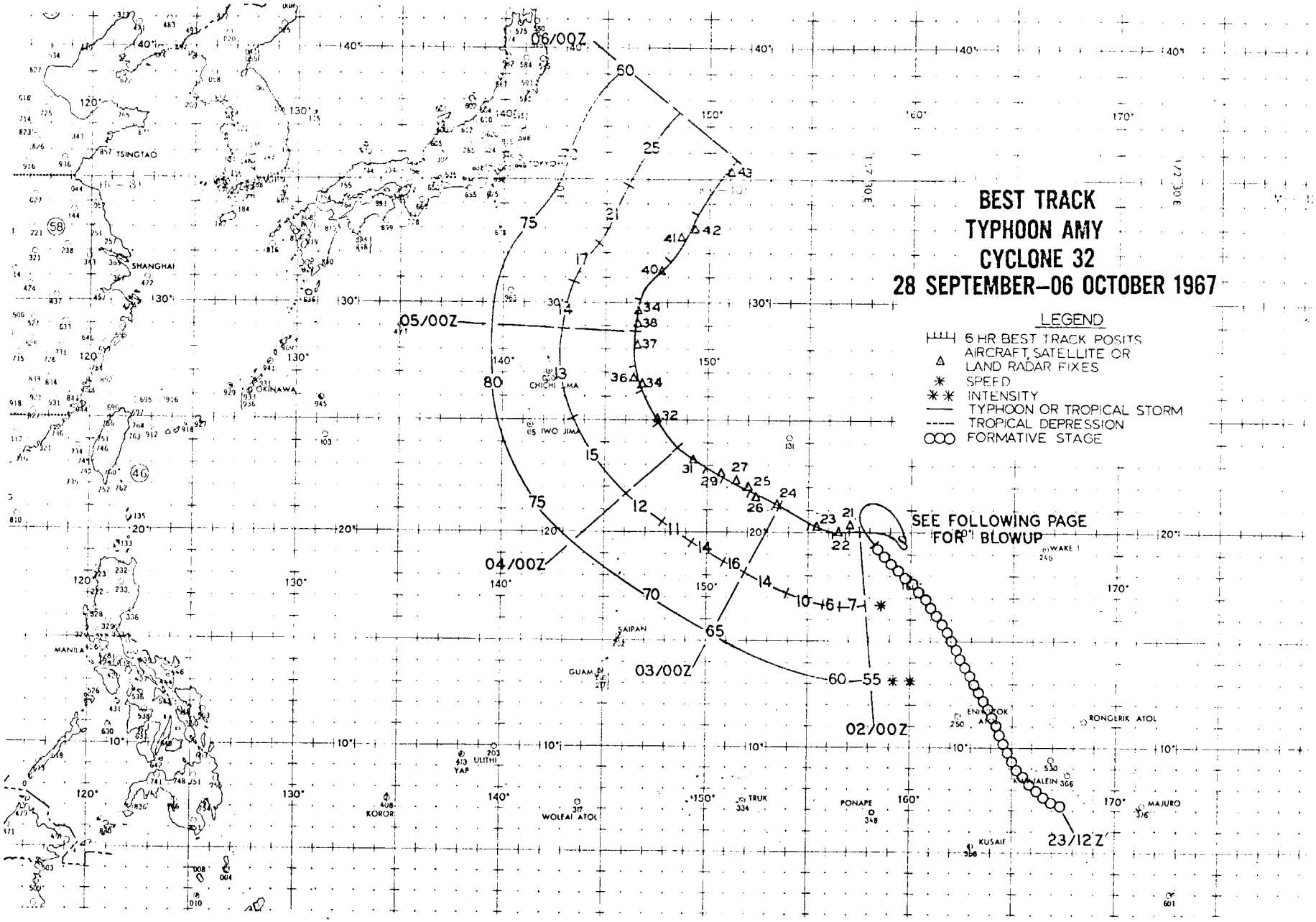
B. INITIAL SURFACE VORTEX

1. COLD VORTEX AT 231200
2. SURFACE PRESSURE LESS THAN 1010MB

C. 200MB FLOW ABOVE SURFACE VORTEX

1. INITIAL - SOUTHEAST
2. UPON REACHING TYPHOON INTENSITY - ANTICYCLONIC

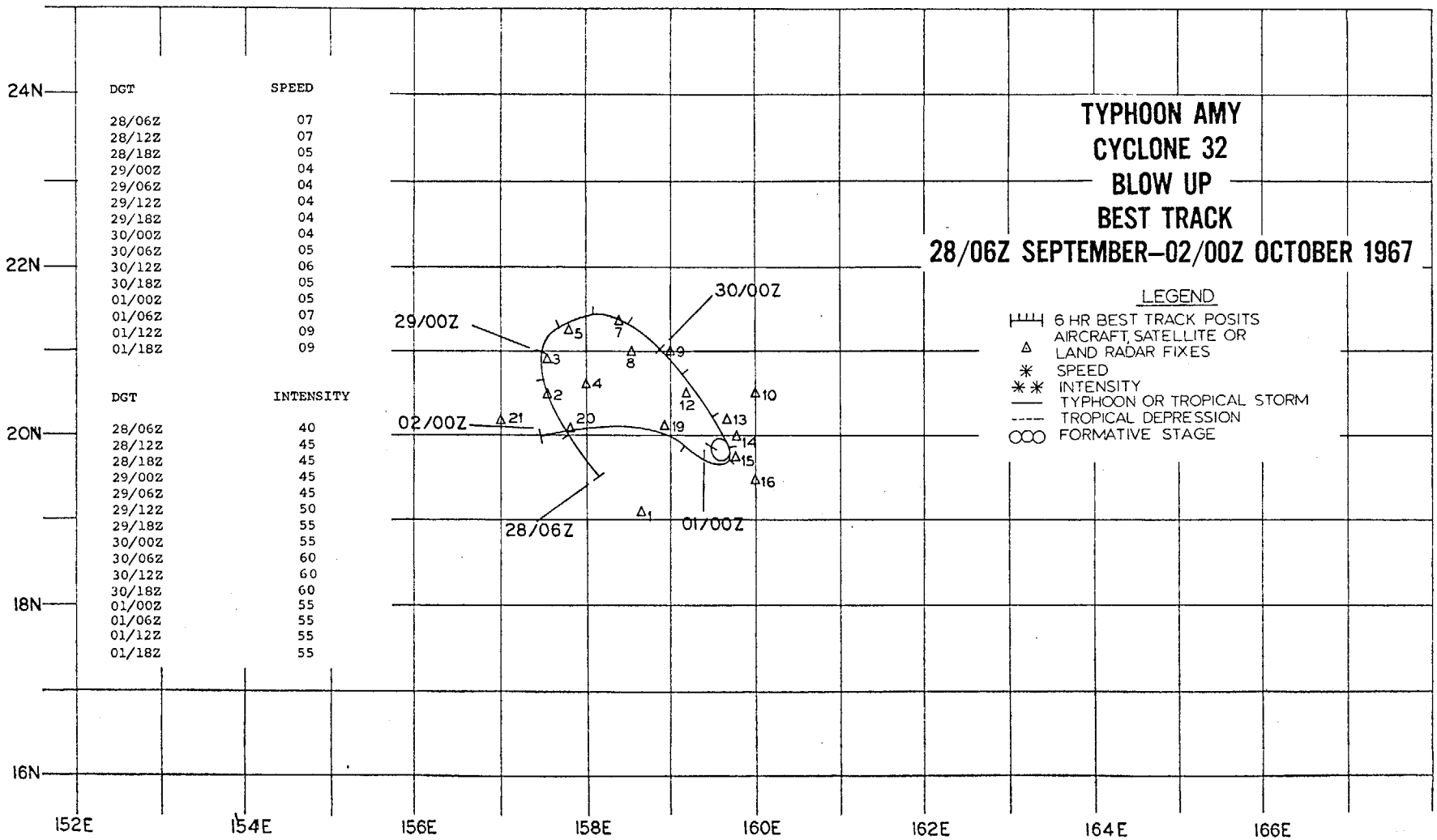
III. FINAL DISPOSITION - BECAME EXTRATROPICAL


BEST TRACK
TYPHOON AMY
CYCLONE 32
28 SEPTEMBER–06 OCTOBER 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
06/00Z
05/00Z
04/00Z
03/00Z
02/00Z
23/12Z
TSINGTAO
SHANGHAI
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
MANILA
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
ENIWETOK
RONGERIK ATOL
KWAJALEIN
MAJURO
WAKE I

TYPHOON AMY
CYCLONE 32
BLOW UP
BEST TRACK
28/06Z SEPTEMBER–02/00Z OCTOBER 1967

DGT	SPEED
28/06Z	07
28/12Z	07
28/18Z	05
29/00Z	04
29/06Z	04
29/12Z	04
29/18Z	04
30/00Z	04
30/06Z	05
30/12Z	06
30/18Z	05
01/00Z	05
01/06Z	07
01/12Z	09
01/18Z	09

DGT	INTENSITY
28/06Z	40
28/12Z	45
28/18Z	45
29/00Z	45
29/06Z	45
29/12Z	50
29/18Z	55
30/00Z	55
30/06Z	60
30/12Z	60
30/18Z	60
01/00Z	55
01/06Z	55
01/12Z	55
01/18Z	55



EYE FIXES CYCLONE 32

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	280204Z	19.1N 158.6E	54-P-P03	0400M	040	040	996	---	--/--	CIRC	----	05	--
2	281550Z	20.5N 157.5E	VW-P-P05	0240M	030	020	996	3112	--/--	CIRC	----	16	--
3	282200Z	20.9N 157.5E	54-P-P10	700MB	045	040	996	3042	15/--	----			--
4	290253Z	20.5N 158.0E	SLTLS	STG X	DIA 02	BNDS 2							
5	290340Z	21.3N 157.7E	54-P-P10	700MB	050	040	994	3036	15/--	CIRC	----	15	--
6	291022Z	21.2N 157.7E	VW-P-P03	0310M	020	030	999	---	--/--	----			F.B.
7	291500Z	21.4N 158.4E	VW-P-P03	0460M	029	045	985	---	--/--	CIRC	----	06	--
8	292130Z	21.0N 158.5E	54-R-F04	500MB	050	---	---	---	--/--	CIRC	----	18	--
9	292202Z	21.0N 159.0E	54-P-P05	700MB	070	055	980	2923	17/--	CIRC	----	20	--
10	300147Z	20.5N 160.0E	SLTLS	STG X	DIA 04	BNDS 2							
11	300235Z	20.9N 159.1E	54-P-P05	700MB	070	055	980	2911	23/--	----			F.B.
12	301018Z	20.5N 159.3E	VW-P-P05	0260M	---	055	981	---	--/--	CIRC	----	22	07
13	301315Z	20.2N 159.6E	VW-R-P10	700MB	---	---	---	---	--/--	----			--
14	301520Z	20.0N 159.7E	VW-P-P05	0260M	---	050	981	---	--/--	CIRC	----	24	--
15	302200Z	19.7N 159.7E	54-P-P02	700MB	058	060	977	2911	19/--	CIRC	----	20	--
16	010238Z	19.5N 160.0E	SLTLS	STG X	DIA 03	BNDS 2							
17	010400Z	19.9N 159.8E	54-P-P03	700MB	040	040	985	2972	19/--	----			F.B.
18	010920Z	19.6N 159.8E	VW-P-P05	0150M	040	045	986	3057	16/08	----			F.B.
19	011502Z	20.1N 158.9E	VW-P-P05	0260M	050	055	986	---	--/--	CIRC	----	35	15
20	012143Z	20.1N 157.8E	54-P-P03	700MB	053	060	990	2981	16/12	ELIP	NE-SW	25X15	--
21	020351Z	20.2N 157.0E	54-P-P02	700MB	025	030	990	2999	14/--	----			--
22	021000Z	20.0N 156.5E	VW-P-P05	0340M	063	050	988	---	--/--	----			--
23	021550Z	20.2N 155.3E	VW-P-P02	0340M	055	045	988	2997	14/08	----			F.B.
24	022140Z	21.1N 153.4E	54-P-P04	700MB	030	060	988	2997	14/13	CIRC	----	05	--

EYE FIXES CYCLONE 32

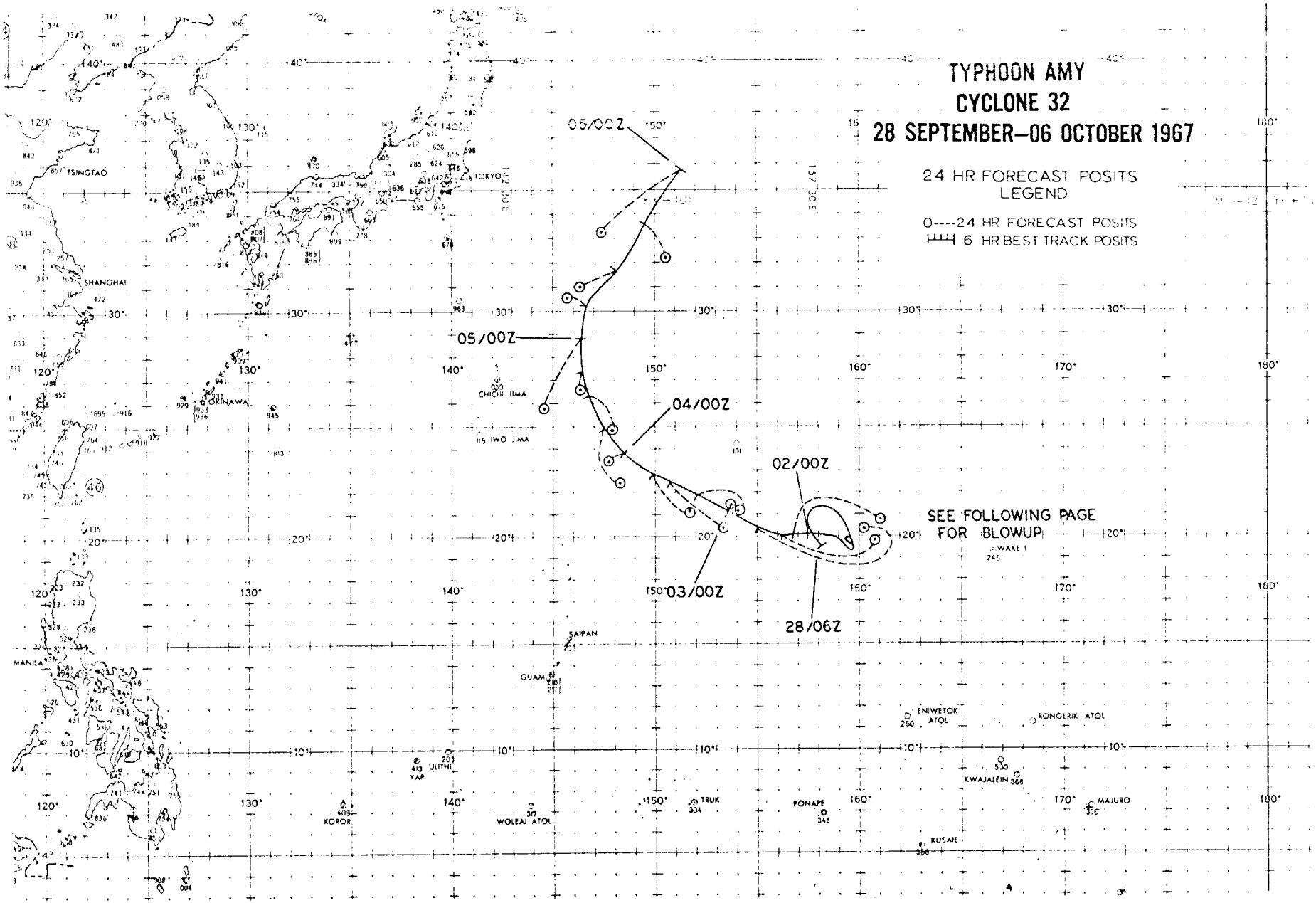
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	EYE FORM	ORIEN-TATION	EYE DIA	THKNS WALL CLOUD
25	030224Z	22.0N 152.0E	SLTLS	STG X	DIA 05	BNDS 2							
26	030400Z	21.6N 152.4E	54-P-P05	700MB	060	065	984	2954	15/--	----			F.B.
27	030930Z	22.3N 151.3E	VW-R-F15	0310M	---	---	---	---	--/--	----			--
28	031010Z	22.3N 151.4E	VW-R-P10	0250M	080	075	---	---	--/--	CIRC	----	10	--
29	031410Z	22.6N 150.7E	VW-R-P10	1100M	---	---	---	---	--/--	----			--
30	031514Z	22.9N 150.4E	VW-P-P05	700MB	045	---	980	2966	13/09	CIRC	----	08	--
31	032215Z	23.4N 149.2E	54-P-P02	700MB	055	045	980	2875	14/--	CIRC	----	10	--
32	040315Z	25.0N 147.5E	SLTLS	STG X	DIA 06	BNDS 3							
33	040345Z	24.8N 147.7E	54-P-P02	700MB	080	065	967	2822	15/--	CIRC	----	10	--
34	040945Z	26.5N 146.8E	VW-R-P10	0270M	052	050	---	---	--/--	ELIP	NW-SE	50X35	12
35	041315Z	26.4N 146.7E	VW-R-P10		---	---	---	---	--/--	----			--
36	041510Z	26.8N 147.4E	VW-P-P05	700MB	060	---	961	2798	18/--	ELIP	NW-SE	60X40	15
37	042221Z	28.3N 146.4E	54-P-P03	700MB	065	050	964	2804	17/--	ELIP	NE-SW	60X40	--
38	050215Z	29.0N 146.5E	SLTLS	STG X	DIA 05	BNDS 3							
39	050400Z	29.6N 146.6E	54-P-P03	700MB	080	050	962	2768	18/--	ELIP	NE-SW	60X40	--
40	051000Z	31.2N 147.7E	VW-P-P10	0290M	070	070	961	---	--/--	ELIP	NW-SE	80X60	15
41	051400Z	32.8N 148.8E	VW-P-P--	0270M	---	060	962	---	--/--	----			--
42	051535Z	33.0N 149.1E	VW-P-P03	0280M	075	065	962	---	--/--	----			F.B.
43	052222Z	35.4N 151.0E	54-P-P02	700MB	065	075	969	3085	22/--	----			N.F.B.

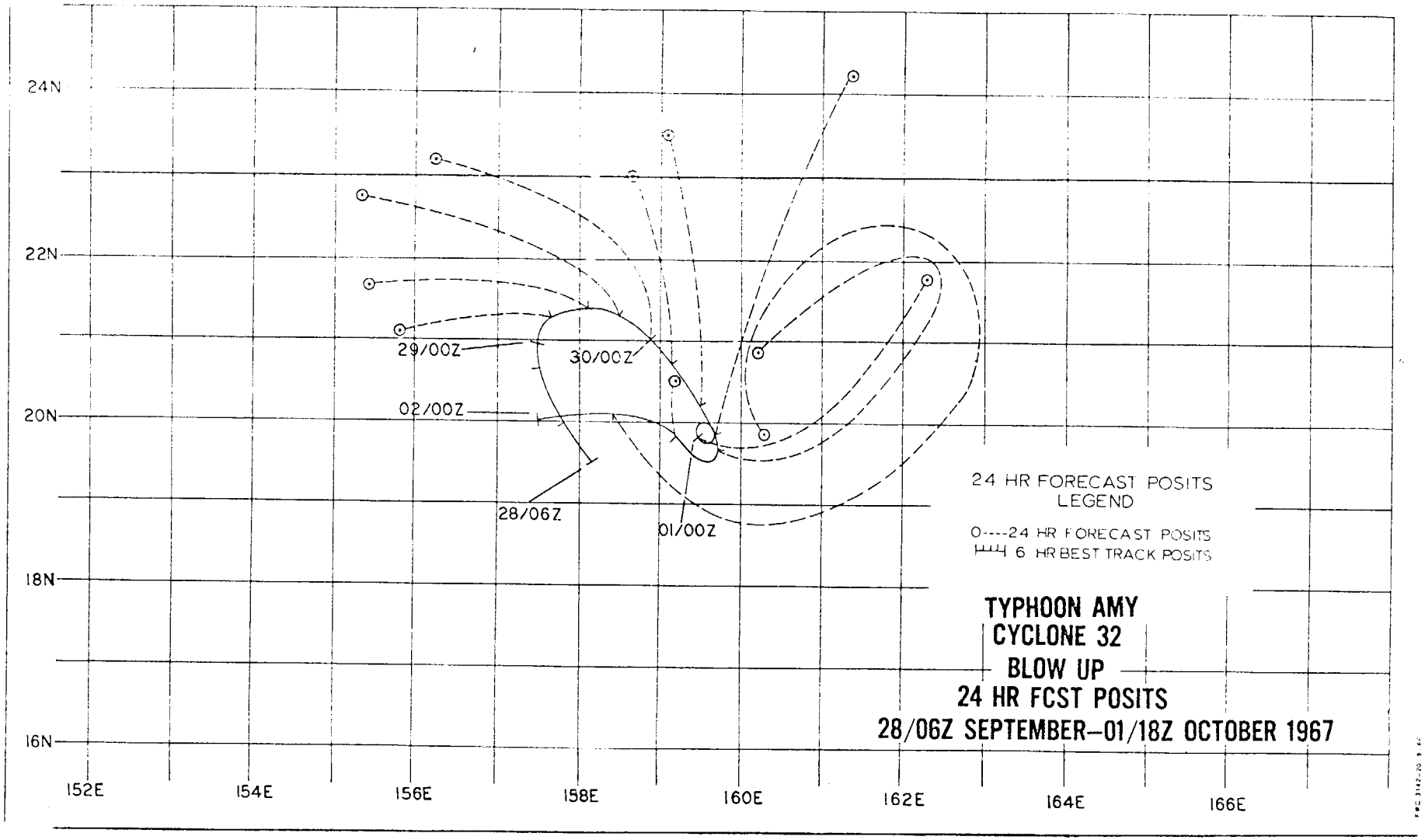
TROPICAL CYCLONE 32 -- 09/28/0600Z TO 10/06/0000Z

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.
280600Z	19.5N	158.2E	--------	--------	--------
281200Z	20.0N	157.7E	--------	--------	--------
281800Z	20.6N	157.5E	--------	--------	--------
290000Z	20.9N	157.5E	--------	--------	--------
290600Z	21.2N	157.7E	267-0102	--------	--------
291200Z	21.4N	158.1E	274-0150	--------	--------
291800Z	21.5N	158.5E	295-0192	--------	--------
300000Z	21.1N	158.9E	311-0186	--------	--------
300600Z	20.7N	159.2E	350-0138	291-0342	--------
301200Z	20.2N	159.4E	356-0198	298-0402	--------
301800Z	19.8N	159.7E	018-0276	310-0456	--------
010000Z	19.8N	159.6E	051-0186	330-0438	--------
010600Z	19.7N	159.8E	015-0072	013-0336	300-0558
011200Z	19.8N	159.3E	000-0042	025-0414	--------
011800Z	20.1N	158.4E	099-0102	037-0540	317-0564
020000Z	20.0N	157.5E	098-0120	059-0534	--------
020600Z	20.0N	156.8E	078-0240	070-0336	045-0618
021200Z	20.0N	156.3E	091-0258	074-0264	--------
021800Z	20.3N	155.0E	090-0288	084-0390	052-0984
030000Z	21.1N	153.5E	046-0012	091-0462	--------
030600Z	21.8N	152.0E	108-0108	085-0654	078-0780
031200Z	22.4N	150.9E	132-0174	090-0696	--------
031800Z	22.9N	149.9E	136-0138	096-0666	092-0750
040000Z	23.8N	148.7E	241-0060	117-0150	--------
040600Z	24.9N	147.6E	168-0144	125-0246	090-1032
041200Z	26.2N	146.8E	147-0096	141-0336	--------
041800Z	27.3N	146.5E	188-0048	155-0282	103-1008
050000Z	28.7N	146.4E	209-0198	171-0114	--------
050600Z	30.1N	146.8E	293-0054	180-0186	161-0360
051200Z	31.6N	148.1E	250-0102	202-0198	--------
051800Z	33.6N	149.5E	149-0102	226-0312	199-0528
060000Z	35.7N	151.4E	234-0252	225-0576	--------

AVERAGE 24 HOUR ERROR - 0144 MI.
AVERAGE 48 HOUR ERROR - 0388 MI.
AVERAGE 72 HOUR ERROR - 0718 MI.


TYPHOON AMY
CYCLONE 32
28 SEPTEMBER–06 OCTOBER 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
05/00Z
05/00Z
04/00Z
02/00Z
03/00Z
28/06Z
SEE FOLLOWING PAGE
FOR BLOWUP
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
MANILA
SAIPAN
GUAM
WAKE I
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
KUSAIE
PONAPE
TRUK
WOLEAI ATOL
KOROR
YAP
ULITHI


24N
22N
20N
18N
16N
152E
154E
156E
158E
160E
162E
164E
166E
29/00Z
30/00Z
02/00Z
28/06Z
01/00Z
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
TYPHOON AMY
CYCLONE 32
BLOW UP
24 HR FCST POSITS
28/06Z SEPTEMBER–01/18Z OCTOBER 1967

TROPICAL CYCLONE 35 - 10/12/0600Z TO 10/20/0000Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 32
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 20
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 2046 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 901MBS AT 142138Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2170M. AT 142138Z
3. MAXIMUM SURFACE WIND - 160 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 675 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - LOW LEVEL SURGE INTO CYCLONIC CIRCULATION FROM THE SOUTH WITH SUBSEQUENT DIVERGENCE AT 200MB LEVEL

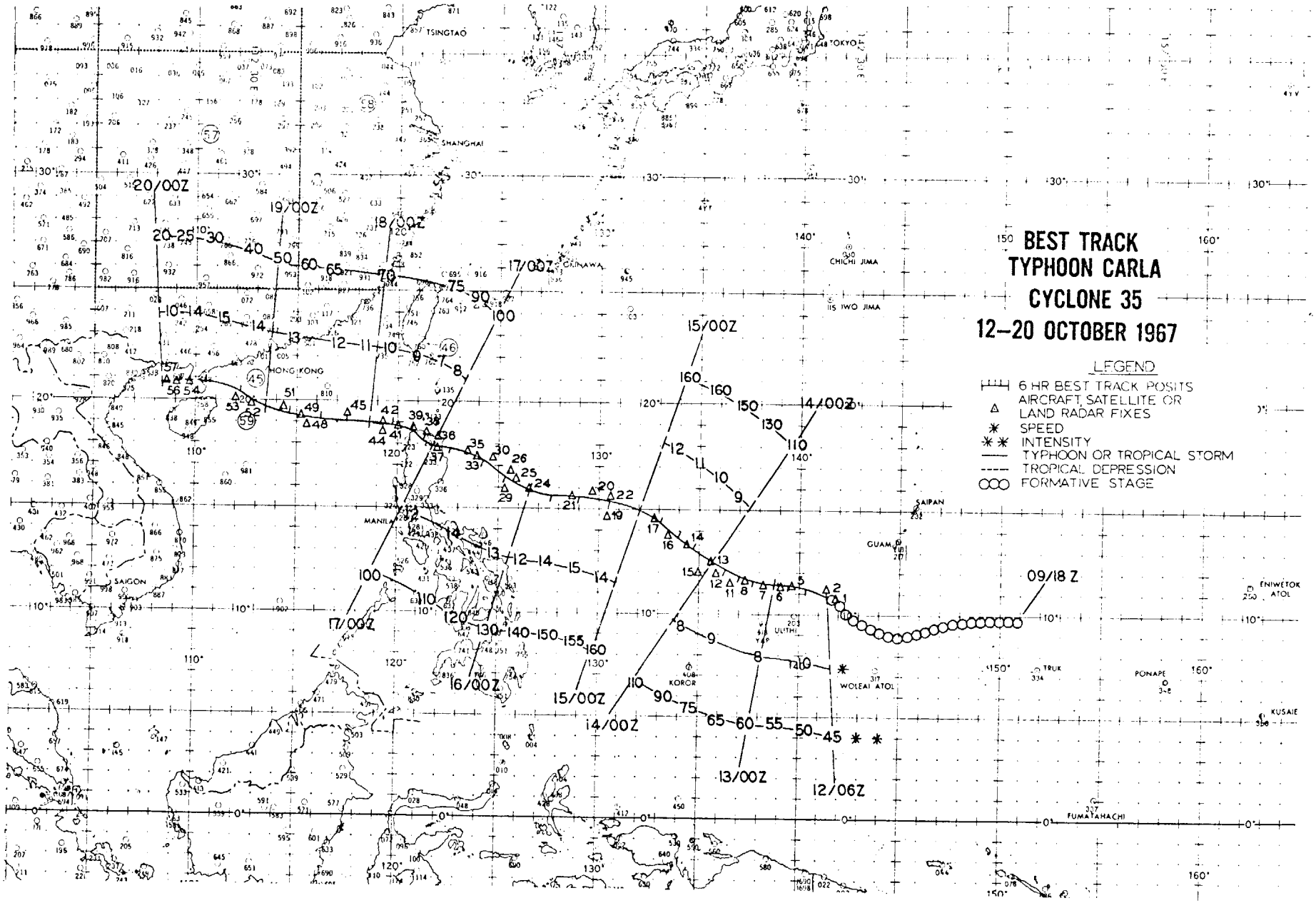
B. INITIAL SURFACE VORTEX

1. JUNCTION VORTEX AT 091800Z
2. SURFACE PRESSURE LESS THAN 1006MB

C. 200MB FLOW ABOVE SURFACE VORTEX

1. INITIAL - SOUTHEAST
2. UPON REACHING TYPHOON INTENSITY - EAST

III. FINAL DISPOSITION - DISSIPATED OVER WATER


BEST TRACK
TYPHOON CARLA
CYCLONE 35
12–20 OCTOBER 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
TSINGTAO
TOKYO
SHANGHAI
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
KUSAIE
FUMATAHACHI
20/00Z
19/00Z
18/00Z
17/00Z
16/00Z
15/00Z
14/00Z
13/00Z
12/06Z
09/18 Z

EYE FIXES CYCLONE 35

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL T/TD	EYE FORM	ORIEN-TATION	EYE DIA	THKNS WALL CLOUD
1	120400Z	10.6N 141.7E	54-P-P03	0400M	036	040	993	---	--/--	----			--
2	120410Z	10.5N 141.5E	SLTLS	STG X	DIA 05 BNDS 1								
3	120745Z	11.1N 141.3E	VW-R-P15	0410M	---	---	---	---	--/--	CIRC	----	17	--
4	120903Z	11.0N 141.2E	VW-P-P05	0300M	045	040	993	3033	12/05	CIRC	----	20	09
5	121536Z	11.3N 139.7E	VW-P-P05	700MB	---	---	991	3022	15/--	CIRC	----	15	--
6	122114Z	11.3N 139.1E	54-P-P02	700MB	045	040	989	2989	13/--	CIRC	----	20	--
7	130306Z	11.5N 138.0E	SLTLS	STG X	DIA 02 BNDS 3								
8	130405Z	11.3N 138.2E	54-P-P02	0310M	045	045	981	---	--/--	CIRC	----	10	--
9	130900Z	11.5N 137.3E	VW-R-F--	0340M	---	---	---	---	--/--	----			--
10	131000Z	11.5N 137.3E	VW-P-P05	700MB	040	---	979	2901	14/12	CIRC	----	25	--
11	131532Z	11.8N 136.6E	VW-P-P05	700MB	045	---	979	2895	13/--	CIRC	----	20	05
12	132148Z	11.9N 135.9E	54-P-P02	700MB	060	060	963	2774	15/--	CIRC	----	15	--
13	140344Z	12.6N 135.5E	54-P-P02	700MB	065	100	938	2573	19/--	CIRC	----	10	10
14	140356Z	12.0N 135.0E	SLTLS	STG X	DIA 03 BNDS 2								
15	140930Z	13.3N 134.4E	VW-R-P10	0270M	055	040	---	---	--/--	CIRC	----	08	05
16	141520Z	13.8N 133.4E	VW-R-P10	700MB	100	---	---	---	--/--	CIRC	----	20	05
17	141815Z	14.3N 132.8E	ACFT RDR	500MB	---	---	---	---	--/--	----			--
18	142138Z	14.2N 132.3E	54-P-P02	700MB	125	110	901	3170	20/13	CIRC	----	02	--
19	150347Z	14.7N 130.4E	54-P-P02	700MB	100	120	908	2283	19/12	CONC		15-05	--
20	150447Z	15.5N 130.5E	SLTLS	STG X	DIA 05 BNDS 3								
21	150900Z	15.8N 129.7E	VW-R-P10	0310M	---	---	---	---	--/--	----			--
22	151015Z	15.5N 128.8E	VW-R-P10	700MB	---	050	---	---	--/--	CONC		23-03	09
23	151528Z	15.8N 128.2E	VW-R-P02	700MB	---	---	---	---	--/--	ELIP	NW-SE	08X04	05
24	152232Z	15.9N 127.1E	SLTLS	STG -	DIA -- BNDS -								

EYE FIXES CYCLONE 35

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	160038Z	15.9N 126.5E	54-P-P03	700MB	090	100	944	2594	17/--	CONC		35-05	--
26	160207Z	16.3N 125.9E	54-R-P--	500MB	108	---	---	---	--/--	----			--
27	160235Z	15.7N 125.6E	LND RDR		---	---	---	---	--/--	----			--
28	160347Z	16.0N 125.5E	SLTLS	STG X	DIA 04	BNDS 4							
29	160400Z	16.3N 125.6E	54-P-P03	700MB	095	070	935	2560	20/--	CONC		60-20	--
30	160510Z	15.7N 125.3E	LND RDR		---	---	---	---	--/--	----			--
31	160830Z	17.0N 124.9E	ACFT RDR		---	---	---	---	--/--	----			--
32	160904Z	17.2N 124.8E	VW-UNK--		---	---	---	---	--/--	----			--
33	161015Z	17.3N 124.2E	VW-P-P01	700MB	100	095	---	2667	18/--	CIRC	----	40	15
34	161215Z	17.4N 124.0E	VW-R-P--	700MB	095	---	---	2595	--/--	----			--
35	161600Z	17.7N 123.5E	VW-P-P02	700MB	080	---	---	2607	20/--	CIRC	----	40	--
36	162125Z	18.1N 122.0E	LND RDR		---	---	---	---	--/--	----			--
37	162144Z	17.8N 122.0E	54-P-P03	500MB	065	050	---	---	--/--	CIRC	----	25	--
38	170400Z	18.1N 121.3E	54-P-P10	500MB	080	100	---	---	--/--	CIRC	----	20	--
39	170945Z	18.5N 120.8E	VW-R-P03	0300M	070	080	---	---	--/--	----			--
40	171200Z	18.8N 120.7E	VW-R-P03	700MB	050	---	---	2957	--/--	CIRC	----	18	--
41	171527Z	18.8N 120.0E	VW-P-P05	700MB	---	---	978	2908	16/--	----			--
42	172045Z	19.0N 119.2E	VW-P-P05	0310M	050	045	979	---	--/--	CIRC	----	80	--
43	180001Z	18.7N 118.5E	VW-P-P05	0400M	085	070	982	---	--/--	CIRC	----	80	--
44	180300Z	18.6N 118.1E	54-P-P03	700MB	060	060	979	2917	14/--	CIRC	----	40	--
45	180527Z	19.0N 117.5E	SLTLS	STG C	DIA --	BNDS -							
46	180646Z	19.3N 117.6E	54-P-P--	700MB	030	040	---	2923	13/--	----			--
47	180940Z	19.5N 117.1E	54-P-P08	700MB	072	---	983	2938	12/--	CIRC	----	15	--
48	181500Z	18.9N 115.5E	VW-P-P05	700MB	---	060	982	2990	--/--	CIRC	----	10	--

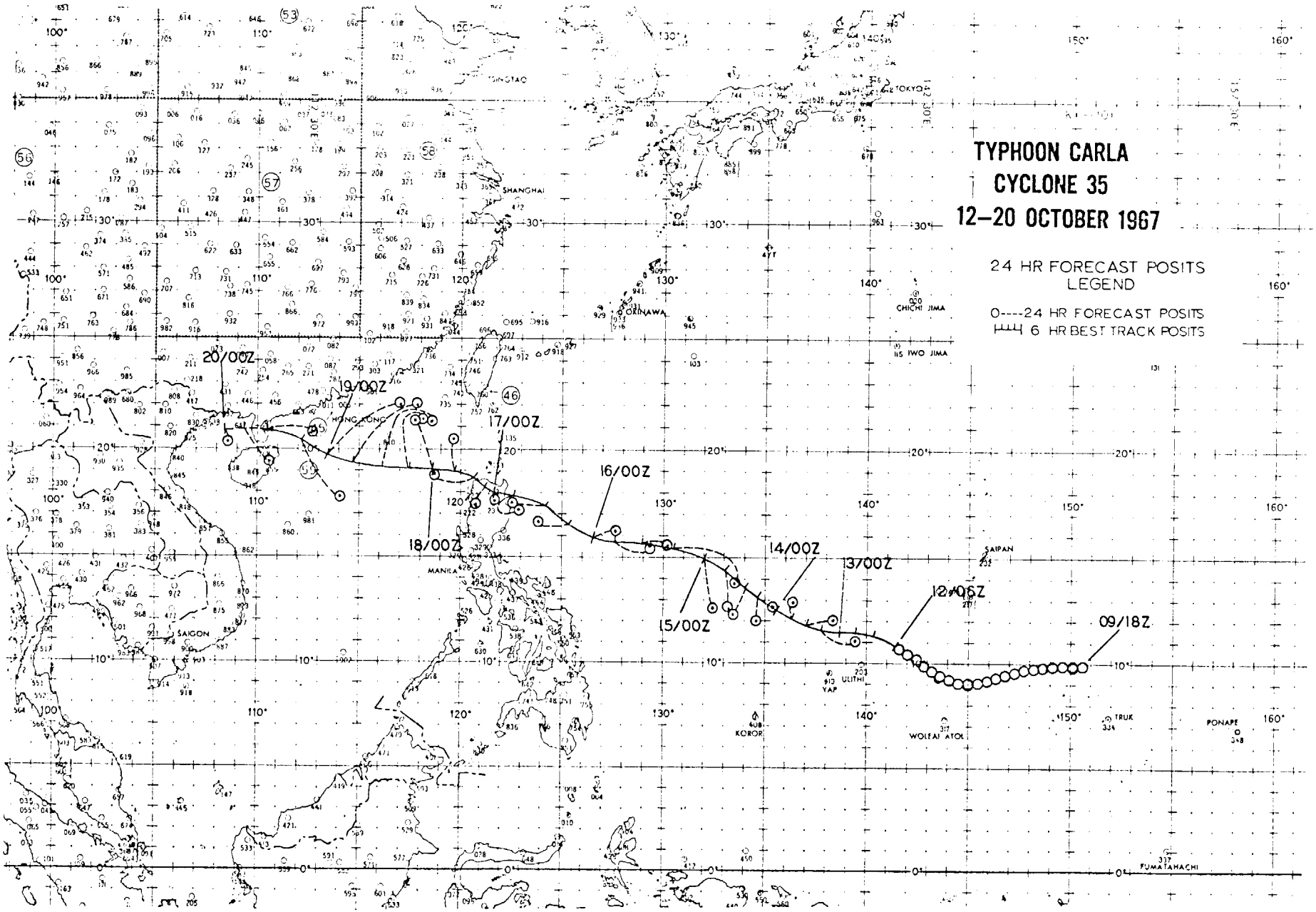
EYE FIXES CYCLONE 35

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	181640Z	19.2N 115.1E	VW-R-P02	700MB	---	---	---	---	--/--	----			--
50	181807Z	19.3N 115.0E	VW-R-P--	700MB	---	---	---	---	--/--	----			--
51	182030Z	19.6N 114.3E	VW-P-P03	700MB	060	---	986	2981	16/--	CIRC	----	10	--
52	190301Z	19.8N 112.7E	S4-P-F03	700MB	070	040	984	2960	15/--	ELIP	NE-SW	30X20	--
53	190423Z	20.0N 112.0E	SLTLS	STG X	DIA 03	BNDS 3							
54	191330Z	20.7N 109.9E	VW-R-P05	1420M	---	---	---	---	--/--	CIRC	----	05	--
55	191600Z	20.9N 109.5E	VW-R-P05	1420M	---	---	---	---	--/--	----			--
56	191900Z	20.7N 109.0E	VW-R-P05	1390M	---	---	---	---	--/--	----			--
57	192100Z	20.7N 108.9E	VW-R-F05		---	---	---	---	--/--	----			--

TROPICAL CYCLONE 35 -- 10/12/0600Z TO 10/20/0000Z
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.
120600Z	10.9N	141.3E	--------	--------	--------
121200Z	11.2N	140.3E	--------	--------	--------
121800Z	11.3N	139.4E	--------	--------	--------
130000Z	11.2N	138.7E	--------	--------	--------
130600Z	11.3N	137.8E	098-0078	--------	--------
131200Z	11.7N	137.0E	080-0066	--------	--------
131800Z	12.0N	136.2E	010-0036	--------	--------
140000Z	12.4N	135.6E	333-0012	--------	--------
140600Z	13.0N	134.8E	200-0066	--------	--------
141200Z	13.5N	134.0E	204-0090	113-0090	--------
141800Z	14.1N	133.0E	176-0108	158-0030	--------
150000Z	14.6N	131.8E	167-0132	153-0048	--------
150600Z	15.3N	130.5E	122-0174	177-0168	--------
151200Z	15.6N	129.0E	107-0078	168-0174	--------
151800Z	15.6N	127.8E	094-0072	146-0192	106-0150
160000Z	15.8N	126.6E	080-0066	137-0228	--------
160600Z	16.5N	125.3E	270-0078	109-0336	154-0216
161200Z	17.3N	124.1E	273-0090	109-0180	--------
161800Z	17.8N	122.7E	158-0030	109-0192	143-0330
170000Z	17.9N	121.7E	180-0018	110-0102	--------
170600Z	18.2N	121.2E	201-0048	270-0108	110-0450
171200Z	18.7N	120.6E	276-0108	266-0168	--------
171800Z	18.9N	119.6E	000-0084	251-0084	116-0144
180000Z	18.9N	118.6E	342-0138	261-0108	--------
180600Z	19.0N	117.4E	016-0132	240-0066	274-0168
181200Z	19.1N	116.1E	047-0180	313-0126	--------
181800Z	19.2N	114.7E	050-0228	025-0270	273-0090
190000Z	19.6N	113.4E	056-0240	026-0324	--------
190600Z	20.3N	112.1E	145-0186	042-0360	193-0054

AVERAGE 24 HOUR ERROR - 0101 MI.
AVERAGE 48 HOUR ERROR - 0167 MI.
AVERAGE 72 HOUR ERROR - 0200 MI.


TYPHOON CARLA
CYCLONE 35
12–20 OCTOBER 1967
24 HR FORECAST POSITS
LEGEND
0----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
20/00Z
19/00Z
17/00Z
16/00Z
18/00Z
15/00Z
14/00Z
13/00Z
12/06Z
09/18Z
HONG KONG
MANILA
SAIGON
SHANGHAI
TSINGTAO
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
FUMATAMACHI

TROPICAL CYCLONE 36 - 10/17/0600Z TO 10/27/1200Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 44
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 24
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 2334 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 948MBS AT 222058Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2634M. AT 240010Z
3. MAXIMUM SURFACE WIND - 100 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 725 MI

II. DEVELOPMENT

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

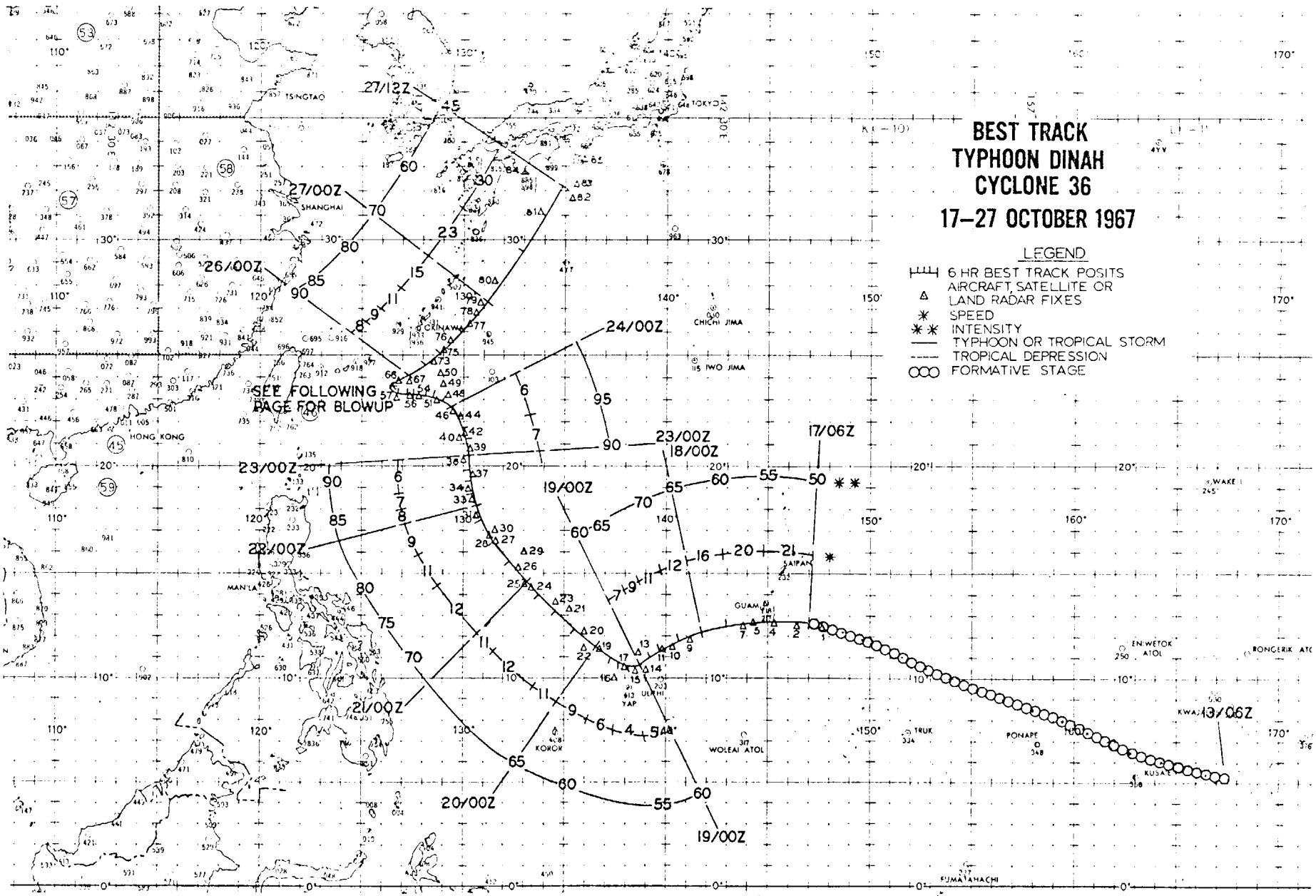
B. INITIAL SURFACE VORTEX

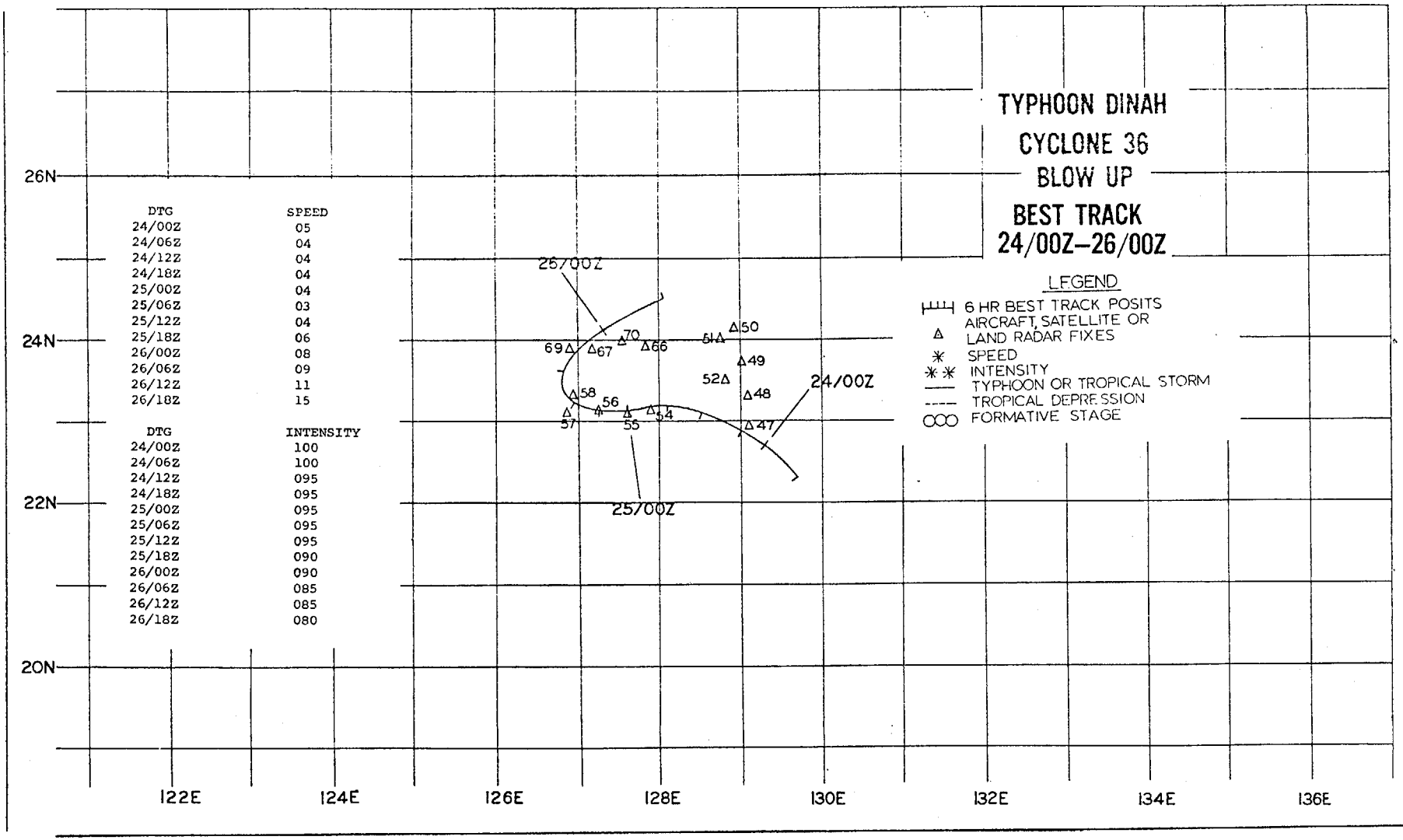
1. JUNCTION VORTEX AT 130600Z
2. SURFACE PRESSURE LESS THAN 1004MB

C. 200MB FLOW ABOVE SURFACE VORTEX

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

III. FINAL DISPOSITION - BECAME EXTRATROPICAL


BEST TRACK
TYPHOON DINAH
CYCLONE 36
17–27 OCTOBER 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
27/12Z
27/00Z
26/00Z
24/00Z
23/00Z
22/00Z
21/00Z
20/00Z
19/00Z
18/00Z
17/06Z
13/06Z
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOLL
TRUK
PONAPE
KUSAE
ENIWETOK ATOLL
RONGERIK ATOLL
WAKE I
FUMA AHACHI



DTG	SPEED
24/00Z	05
24/06Z	04
24/12Z	04
24/18Z	04
25/00Z	04
25/06Z	03
25/12Z	04
25/18Z	06
26/00Z	08
26/06Z	09
26/12Z	11
26/18Z	15

DTG	INTENSITY
24/00Z	100
24/06Z	100
24/12Z	095
24/18Z	095
25/00Z	095
25/06Z	095
25/12Z	095
25/18Z	090
26/00Z	090
26/06Z	085
26/12Z	085
26/18Z	080

EYE FIXES CYCLONE 36

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	170325Z	12.5N 147.8E	VW-P-P05	0270M	050	050	997	---	--/--	CIRC	----	15	02
2	170755Z	12.6N 146.4E	LND RDR		---	---	---	---	--/--	----			--
3	170855Z	12.7N 146.1E	LND RDR		---	---	---	---	--/--	----			--
4	171015Z	12.7N 145.3E	VW-P-P05	0310M	043	050	996	---	--/--	CIRC	----	13	--
5	171220Z	12.8N 144.2E	LND RDR		---	---	---	---	--/--	----			--
6	171300Z	12.8N 144.4E	VW-P-P05	0310M	052	055	995	---	--/--	CIRC	----	06	06
7	171500Z	12.4N 143.9E	VW-R-P--		---	---	---	---	--/--	----			--
8	171600Z	12.3N 143.5E	VW-P-P05	0310M	050	040	991	---	--/--	CIRC	----	08	--
9	180400Z	11.8N 141.1E	54-P-P07	700MB	050	065	983	2932	14/--	CIRC	----	10	--
10	180850Z	11.6N 140.3E	VW-R-P--	0490M	---	---	---	---	--/--	----			--
11	181100Z	11.5N 139.9E	VW-P-P05	700MB	045	---	986	---	12/--	CIRC	----	12	--
12	180328Z	11.5N 141.0E	SLTLS	STG C	DIA --	BNDS -							
13	181600Z	11.3N 138.6E	VW-P-P03	700MB	---	---	---	---	--/--	ELIP	NE-SW	15X10	--
14	182149Z	10.5N 139.0E	54-P-P05	700MB	031	050	995	3044	13/12	ELIP	NE-SW	15X10	--
15	190323Z	10.4N 138.5E	54-P-P05	700MB	040	045	994	3042	13/--	CIRC	----	20	--
16	190419Z	10.0N 137.5E	SLTLS	STG C	DIA --	BNDS -							
17	191000Z	10.5N 138.0E	VW-P-P05	0340M	037	030	991	---	--/--	----			F.B.
18	191628Z	10.7N 137.8E	VW-P-P05	0260M	---	---	987	---	--/--	----			F.B.
19	192212Z	11.4N 136.7E	54-P-P03	700MB	038	040	988	---	--/--	----			--
20	200315Z	11.5N 136.0E	SLTLS	STG X	DIA 02	BNDS 1							
21	200344Z	12.1N 136.0E	54-P-P03	0400M	050	045	988	---	--/--	----			--
22	200958Z	13.3N 135.2E	VW-P-P10	0330M	050	040	988	---	--/--	CIRC	----	20	--
23	201510Z	13.7N 134.5E	VW-P-P10	700MB	052	---	---	3026	15/--	CIRC	----	15	--
24	202150Z	14.4N 133.3E	54-P-P02	700MB	070	060	990	3036	17/--	CIRC	----	20	--

EYE FIXES CYCLONE 36

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	202300Z	14.5N 133.0E	ACFT RDR		060	---	---	---	--/--	----			--
26	210343Z	15.2N 132.8E	54-P-P02	700MB	070	065	985	2963	16/12	CIRC	----	20	--
27	210405Z	16.0N 133.0E	SLTLS	STG X	DIA 02	BNDS 2							
28	210953Z	16.5N 131.5E	VW-R-P10	0290M	068	065	---	---	--/--	CIRC	----	05	--
29	211238Z	16.7N 131.1E	VW-R-P--		---	---	---	---	--/--	----			--
30	211500Z	17.0N 131.4E	VW-P-P05	700MB	076	---	977	2887	14/--	CIRC	----	05	--
31	212155Z	17.7N 130.6E	54-P-P03	700MB	050	050	966	2795	16/--	ELIP	N-S	25X15	--
32	220000Z	17.8N 130.5E	54-P-P03	700MB	060	060	965	2792	15/--	ELIP	N-S	25X15	--
33	220255Z	18.5N 130.4E	54-P-P03	700MB	080	070	964	2777	15/--	ELIP	N-S	35X20	--
34	220456Z	18.5N 130.5E	SLTLS	STG X	DIA 04	BNDS 3							
35	220840Z	18.9N 130.2E	VW-P-P05	0290M	080	075	959	---	--/--	CIRC	----	15	--
36	221205Z	19.1N 130.2E	VW-R-P10	700MB	080	---	---	---	--/--	CIRC	----	18	--
37	221423Z	19.6N 130.4E	VW-P-P10	700MB	055	---	962	2790	16/--	CIRC	----	20	--
38	222058Z	20.2N 130.0E	54-P-P03	700MB	060	---	948	2673	18/--	CIRC	----	40	--
39	230257Z	20.9N 130.3E	54-P-P03	700MB	085	050	960	2722	23/--	----			--
40	230356Z	20.5N 130.0E	SLTLS	STG X	DIA 04	BNDS 4							
41	230813Z	21.4N 129.8E	VW-R-P10	700MB	---	---	---	---	--/--	----			--
42	230900Z	21.5N 129.8E	VW-R-P10	700MB	068	060	---	---	--/--	CIRC	----	12	--
43	231000Z	21.5N 130.0E	VW-R-P10	700MB	---	---	---	---	--/--	----			--
44	231200Z	21.8N 130.2E	VW-R-P10	700MB	---	---	---	---	--/--	CIRC	----	12	--
45	231500Z	22.2N 129.8E	VW-R-P10	700MB	---	---	---	---	--/--	CIRC	----	16	--
46	232100Z	22.6N 129.4E	54-P-P03	500MB	060	---	951	2670	15/15	CIRC	----	40	--
47	240010Z	22.7N 129.3E	54-P-P03	700MB	085	040	950	2634	17/--	CIRC	----	40	--
48	240257Z	22.9N 129.1E	54-P-P03	700MB	090	075	950	2627	16/--	CIRC	----	25	--

EYE FIXES CYCLONE 36

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	240430Z	23.4N 129.1E	LND RDR		---	---	---	---	--/--	----			--
50	240700Z	23.7N 129.0E	LND RDR		---	---	---	---	--/--	----			--
51	240800Z	24.2N 128.9E	LND RDR		---	---	---	---	--/--	----			--
52	240810Z	23.0N 128.8E	VW-R-P10	0330M	075	060	---	---	--/--	CIRC	----	25	15
53	241145Z	23.5N 128.8E	VW-R-P10	0870M	095	---	---	---	--/--	CIRC	----	22	--
54	241435Z	23.4N 128.7E	VW-R-P10	700MB	080	---	---	---	--/--	CIRC	----	25	--
55	242123Z	23.1N 127.9E	54-P-P03	700MB	085	---	948	2646	16/--	CIRC	----	30	--
56	250019Z	23.1N 127.6E	54-P-P03	700MB	090	065	950	2664	15/--	CIRC	----	25	--
57	250305Z	23.1N 127.3E	54-P-P03	700MB	085	070	950	2673	16/--	CIRC	----	25	--
58	250630Z	23.1N 126.8E	LND RDR		---	---	---	---	--/--	----			--
59	250730Z	23.3N 126.9E	LND RDR		---	---	---	---	--/--	----			--
60	250900Z	23.1N 127.2E	VW-R-P05	700MB	042	050	---	---	--/--	CIRC	----	25	06
61	251000Z	23.1N 127.1E	VW-R-P05	700MB	---	---	---	---	--/--	----			--
62	251030Z	23.2N 127.0E	LND RDR		---	---	---	---	--/--	----			--
63	251100Z	23.2N 127.1E	VW-R-P10	700MB	---	---	---	---	--/--	----			--
64	251210Z	23.2N 127.0E	VW-R-P05	700MB	---	---	---	---	--/--	CIRC	----	28	06
65	251500Z	23.2N 126.9E	VW-R-P05	700MB	076	---	---	---	--/--	CIRC	----	28	04
66	252030Z	23.9N 126.8E	LND RDR		---	---	---	---	--/--	----			--
67	252100Z	23.8N 127.2E	LND RDR		---	---	---	---	--/--	----			--
68	252100Z	23.8N 127.1E	54-P-P03	700MB	075	---	961	2722	14/--	CIRC	----	35	--
69	252130Z	23.9N 126.9E	LND RDR		---	---	---	---	--/--	----			--
70	260007Z	24.0N 127.5E	54-P-P03	700MB	080	050	958	2731	15/--	----			F.B.
71	260300Z	24.1N 127.6E	54-P-P03	700MB	094	070	961	2731	15/--	----			F.B.
72	260330Z	24.2N 127.4E	LND RDR		---	---	---	---	--/--	----			--

EYE FIXES CYCLONE 36

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	2608302	24.8N 128.5E	LND RDR		---	---	---	---	--/--	----			--
74	2610352	25.0N 128.5E	VW-R-F15	700MB	070	---	---	---	--/--	CIRC	----	30	--
75	2612302	25.2N 129.0E	VW-UNK--		---	---	---	---	--/--	----			--
76	2614202	25.5N 129.2E	VW-P-P05	700MB	055	---	---	2824	14/--	CIRC	----	30	--
77	2619302	26.3N 130.2E	LND RDR		---	---	---	---	--/--	----			--
78	2621302	26.9N 130.6E	54-P-P02	700MB	070	055	969	2826	17/--	CIRC	----	40	--
79	2623582	27.3N 130.9E	54-P-P02	700MB	068	060	969	2877	18/--	CIRC	----	40	--
80	2702052	28.3N 131.5E	54-P-P02	700MB	065	065	---	2835	16/10	CIRC	----	50	--
81	2703222	28.0N 133.0E	SLTLS	STG X	DIA 05	BNDS 3							
82	2708502	31.1N 133.8E	VW-P-P05	700MB	056	045	---	2792	14/--	CIRC	----	50	--
83	2711002	31.8N 135.3E	LND RDR		---	---	---	---	--/--	----			--
84	2712302	32.3N 135.5E	VW-P-P--	700MB	070	---	---	2798	14/13	----			--
85	2715222	33.4N 136.0E	VW-P-P05	700MB	---	---	---	2792	14/--	----			--

TROPICAL CYCLONE 36 -- 10/17/0600Z TO 10/27/1200Z

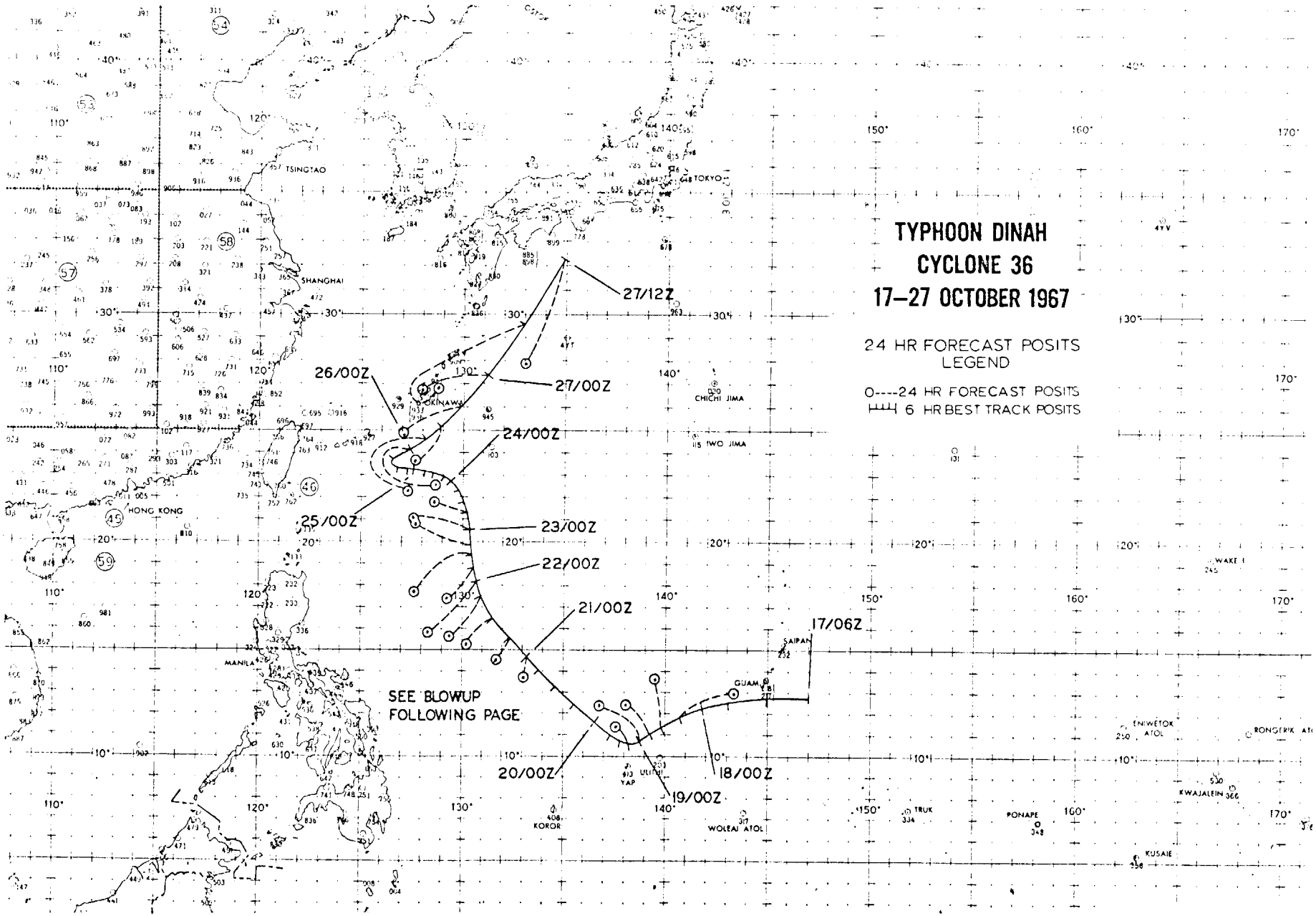
POSITION AND FORECAST VERIFICATION DATA

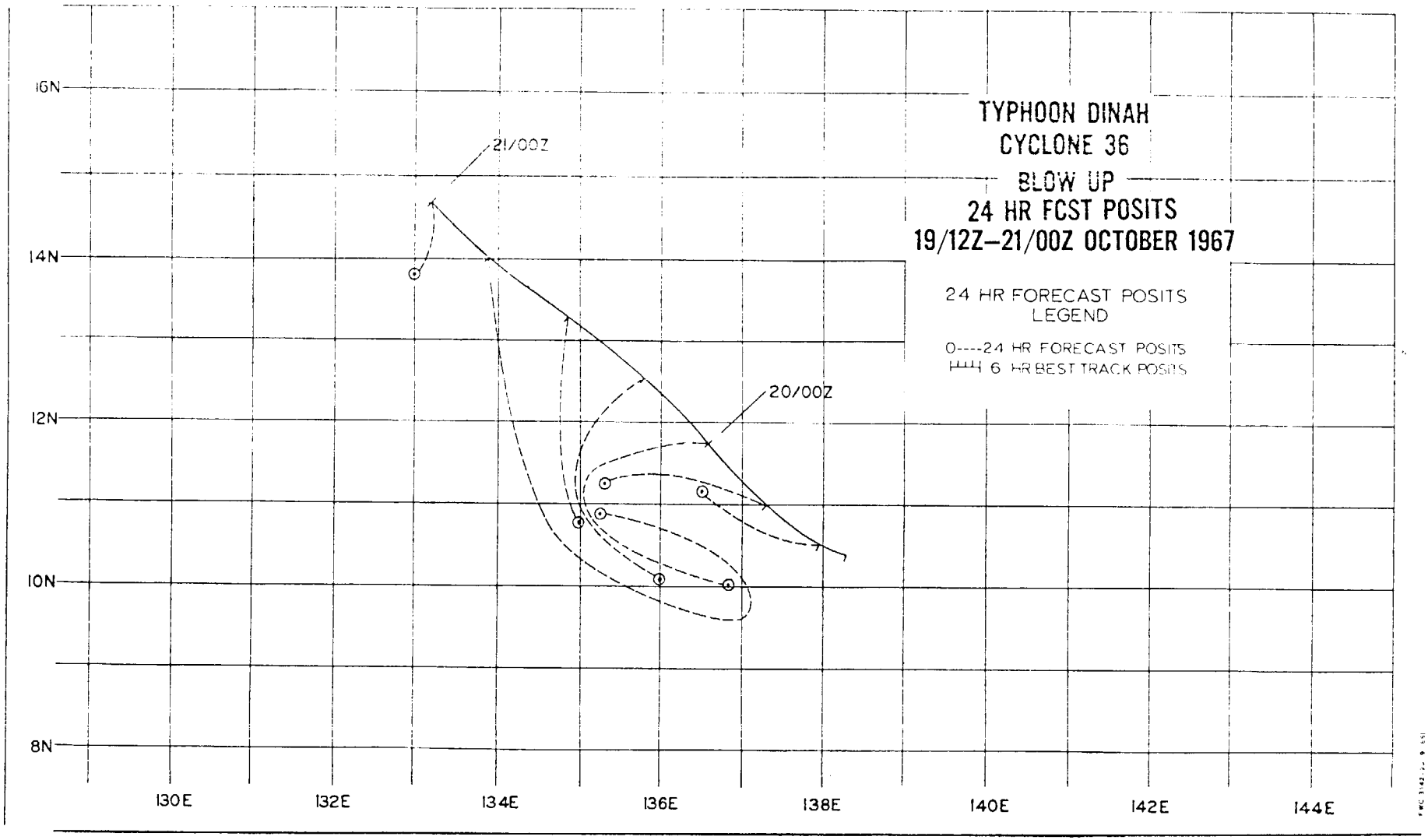
DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DIST.	48 HR. ERROR DEG. DIST.	72 HR. ERROR DEG. DIST.
170600Z	12.7N	147.0E	--------	--------	--------
171200Z	12.7N	144.8E	--------	--------	--------
171800Z	12.4N	143.0E	--------	--------	--------
180000Z	12.1N	141.8E	--------	--------	--------
180600Z	11.7N	140.8E	064-0156	--------	--------
181200Z	11.3N	139.8E	352-0132	--------	--------
181800Z	10.9N	139.2E	321-0102	--------	--------
190000Z	10.6N	138.7E	313-0144	--------	--------
190600Z	10.4N	138.3E	325-0072	018-0198	--------
191200Z	10.5N	137.9E	298-0084	334-0222	--------
191800Z	11.0N	137.3E	275-0174	302-0168	--------
200000Z	11.7N	136.6E	173-0102	289-0180	--------
200600Z	12.5N	135.7E	175-0144	242-0150	350-0108
201200Z	13.3N	134.8E	175-0156	226-0156	--------
201800Z	14.0N	133.9E	159-0204	244-0276	251-0138
210000Z	14.7N	133.2E	187-0054	175-0240	--------
210600Z	15.5N	132.3E	207-0066	173-0282	216-0288
211200Z	16.4N	131.4E	223-0102	182-0294	--------
211800Z	17.3N	130.8E	215-0144	180-0336	235-0420
220000Z	18.0N	130.4E	222-0186	200-0156	--------
220600Z	18.7N	130.2E	218-0096	218-0222	190-0408
221200Z	19.3N	130.2E	277-0144	231-0300	--------
221800Z	19.8N	130.3E	293-0162	235-0348	211-0450
230000Z	20.5N	130.3E	280-0156	237-0408	--------
230600Z	21.2N	130.2E	289-0084	240-0258	234-0438
231200Z	21.7N	130.0E	226-0066	288-0264	--------
231800Z	22.3N	129.7E	082-0042	302-0240	243-0510
240000Z	22.7N	129.3E	064-0024	302-0216	--------
240600Z	22.9N	129.0E	050-0264	345-0114	250-0312
241200Z	23.1N	128.5E	051-0288	199-0018	--------
241800Z	23.2N	128.1E	047-0330	059-0348	012-0336
250000Z	23.1N	127.6E	048-0336	057-0312	--------
250600Z	23.1N	127.3E	039-0240	055-0894	040-0414
251200Z	23.2N	126.9E	096-0102	056-0918	--------

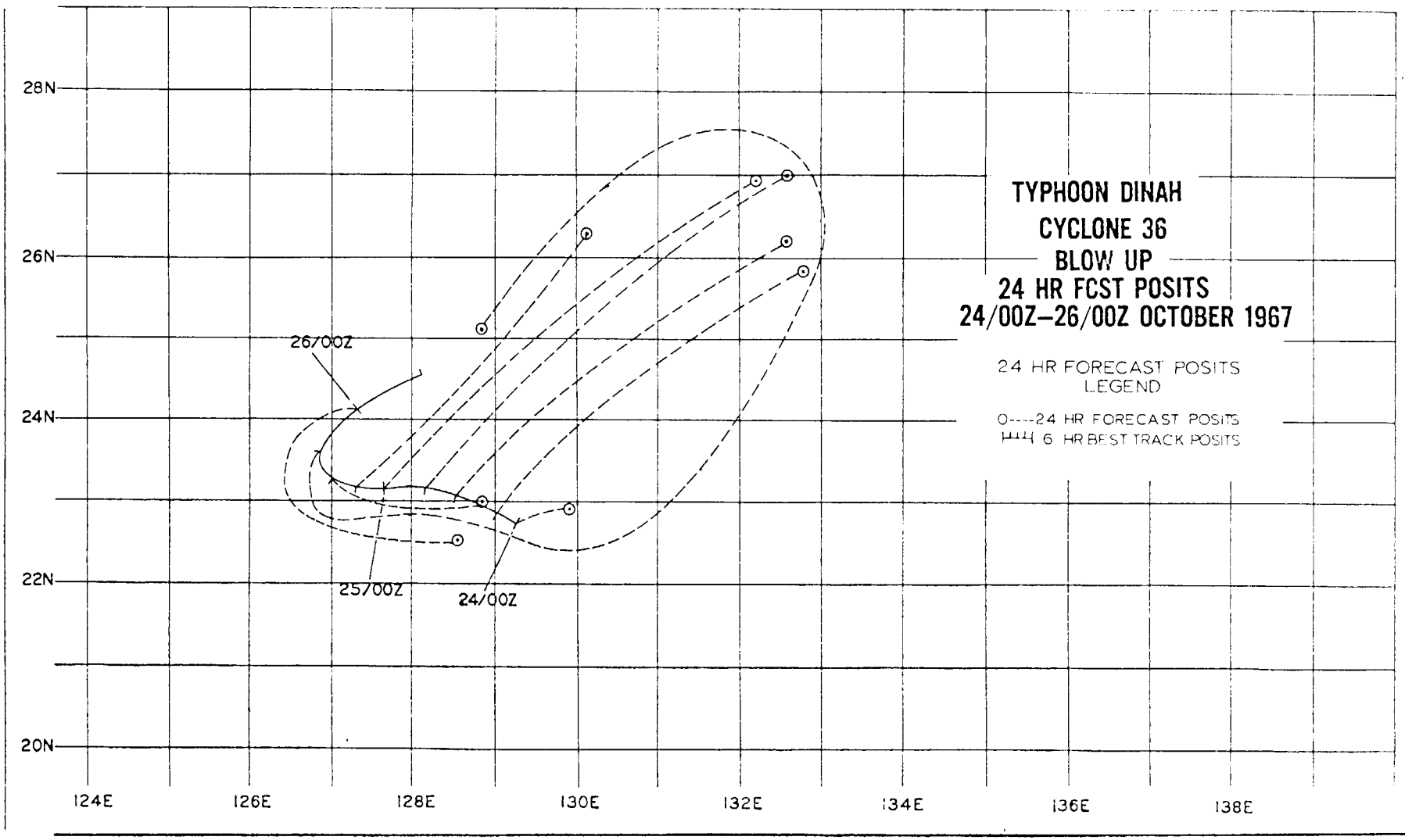
TROPICAL CYCLONE 36 -- 10/17/0600Z TO 10/27/1200Z
POSITION AND FORECAST VERIFICATION DATA (CONT)

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DIST.	48 HR. ERROR DEG. DIST.	72 HR. ERROR DEG. DIST.
251800Z	23.6N	126.8E	051-0138	058-0954	061-0744
260000Z	24.1N	127.4E	147-0108	058-0864	--------
260600Z	24.5N	128.1E	200-0138	054-0576	065-1332
261200Z	25.2N	128.8E	213-0120	046-0090	--------
261800Z	26.1N	129.7E	237-0168	053-0216	--------
270000Z	27.4N	131.0E	253-0180	240-0162	--------
270600Z	29.8N	132.8E	234-0288	222-0420	072-0618
271200Z	32.2N	135.0E	202-0276	230-0540	--------

AVERAGE 24 HOUR ERROR - 0151 MI.
AVERAGE 48 HOUR ERROR - 0333 MI.
AVERAGE 72 HOUR ERROR - 0465 MI.


TYPHOON DINAH
CYCLONE 36
17–27 OCTOBER 1967
24 HR FORECAST POSITS
LEGEND
0----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
27/12Z
27/00Z
26/00Z
24/00Z
25/00Z
23/00Z
22/00Z
21/00Z
20/00Z
19/00Z
18/00Z
17/06Z
SEE BLOWUP
FOLLOWING PAGE
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
KWAJALEIN
ENIWETOK ATOL
WAKE I
RONGERIK AT


TYPHOON DINAH
CYCLONE 36
BLOW UP
24 HR FCST POSITS
19/12Z–21/00Z OCTOBER 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
21/00Z
20/00Z
16N
14N
12N
10N
8N
130E
132E
134E
136E
138E
140E
142E
144E


TYPHOON DINAH
CYCLONE 36
BLOW UP
24 HR FCST POSITS
24/00Z–26/00Z OCTOBER 1967
24 HR FORECAST POSITS
LEGEND
O----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
26/00Z
25/00Z
24/00Z
28N
26N
24N
22N
20N
124E
126E
128E
130E
132E
134E
136E
138E

TROPICAL CYCLONE 37 - 10/31/0000Z TO 11/08/0000Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 33
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 18
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 2184 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 908MBS AT 022200Z
2. MINIMUM OBSERVED 700MB HEIGHT - 5204M. AT 021520Z
3. MAXIMUM SURFACE WIND - 140 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 550 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - 200MB ANTICYCLONE OVER THE SURFACE CYCLONE

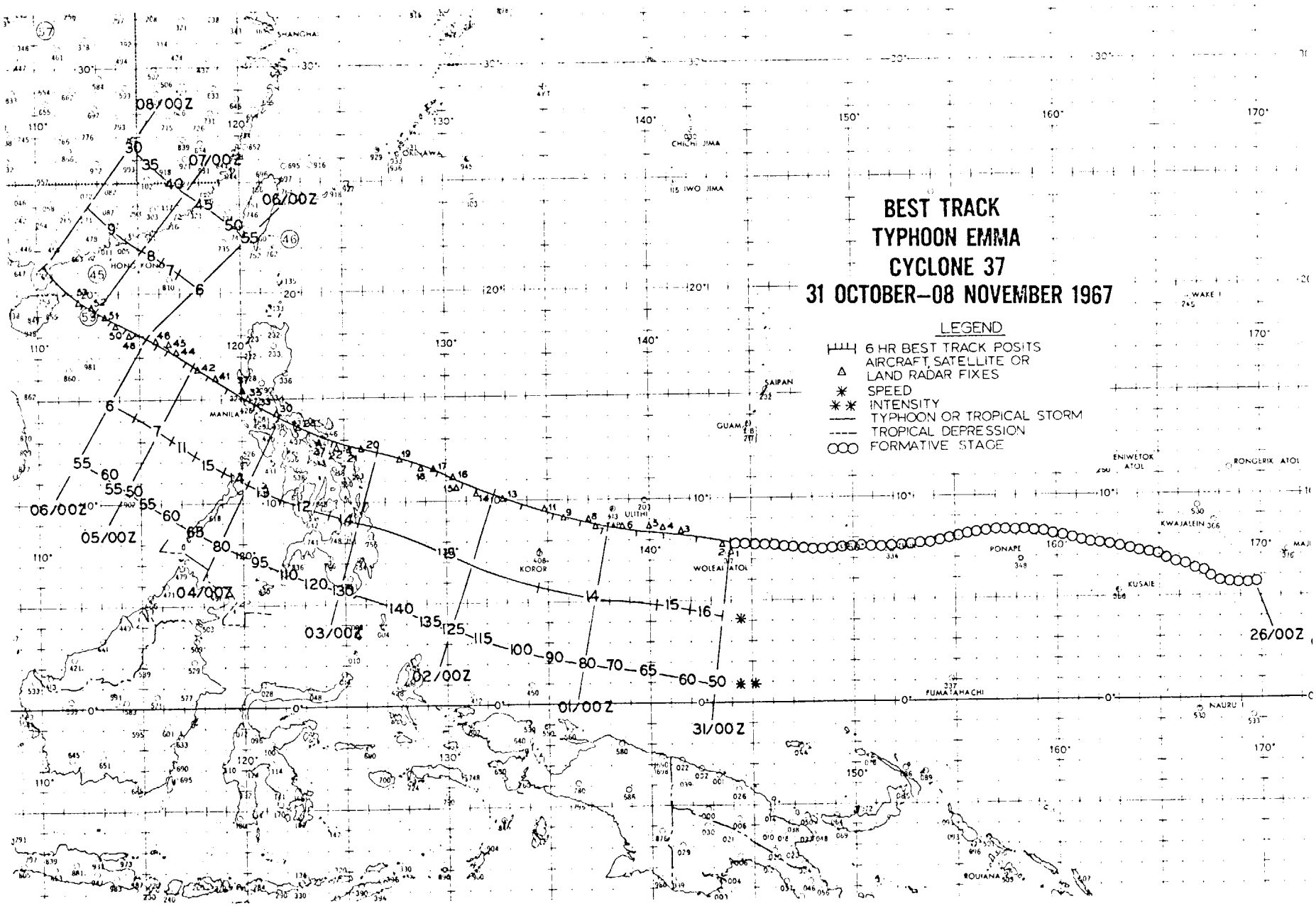
B. INITIAL SURFACE VORTEX

1. JUNCTION VORTEX AT 260000Z
2. SURFACE PRESSURE LESS THAN 1008MB

C. 200MB FLOW ABOVE SURFACE VORTEX

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

III. FINAL DISPOSITION - DISSIPATED OVER LAND


BEST TRACK
TYPHOON EMMA
CYCLONE 37
31 OCTOBER–08 NOVEMBER 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
08/00Z
07/00Z
06/00Z
05/00Z
04/00Z
03/00Z
02/00Z
01/00Z
31/00Z
26/00Z
SHANGHAI
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIPAN
GUAM
ULITHI
KOROR
WOLEAI ATOL
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
PONAPE
KUSAIE
WAKE I
FUMATAMACHI
NAURU I
ROUIANA

EYE FIXES CYCLONE 37

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	302150Z	07.5N 144.0E	SLTLS	STG -	DIA --	BNDS -							
2	310100Z	07.8N 143.6E	VW-P-P03	0230M	055	050	991	---	--/--	CIRC	----	20	03
3	310920Z	08.4N 141.5E	VW-P-P05	0290M	050	045	990	---	--/--	CIRC	----	25	15
4	311230Z	08.5N 140.7E	VW-R-P--		---	---	---	---	--/--	----			--
5	311545Z	08.6N 140.0E	VW-P-P05	0300M	060	060	983	2980	11/--	CIRC	----	25	10
6	312131Z	08.6N 138.6E	54-P-P03	700MB	060	065	975	2883	15/--	CIRC	----	25	--
7	010315Z	08.7N 137.3E	54-P-P03	700MB	080	075	978	2847	15/--	CIRC	----	30	--
8	010346Z	09.0N 137.0E	SLTLS	STG X	DIA 06	BNDS 2							
9	010900Z	09.0N 136.1E	VW-R-P--	0380M	---	---	---	---	--/--	CIRC	----	35	--
10	010950Z	09.0N 135.7E	VW-P-P02	0370M	100	100	971	---	--/--	CIRC	----	30	--
11	011400Z	09.5N 134.9E	VW-R-P--	700MB	---	---	---	---	--/--	----			--
12	011520Z	09.8N 134.7E	VW-P-P02	700MB	085	---	960	2743	16/--	CIRC	----	20	--
13	012230Z	10.0N 132.9E	54-P-P05	700MB	105	080	939	2585	20/--	CIRC	----	20	--
14	020307Z	10.3N 131.4E	54-P-P02	700MB	095	130	---	2521	23/--	CIRC	----	25	--
15	020900Z	10.6N 130.5E	VW-R-P--	0330M	---	---	---	---	--/--	----			--
16	021015Z	11.1N 130.3E	VW-P-P10	700MB	095	100	942	2603	22/13	CIRC	----	16	05
17	021345Z	11.5N 129.2E	VW-R-P--	700MB	---	---	---	---	--/--	----			--
18	021520Z	11.6N 128.8E	VW-P-P10	700MB	095	---	916	2204	24/--	CIRC	----	14	05
19	022200Z	12.0N 127.7E	54-P-P02	700MB	112	100	908	2252	24/--	ELIP	N-S	20X15	--
20	030330Z	12.5N 125.8E	54-P-P05	700MB	110	100	938	2576	20/--	CIRC	----	15	--
21	030800Z	12.6N 125.1E	LND RDR		---	---	---	---	--/--	----			--
22	030900Z	12.6N 124.9E	LND RDR		---	---	---	---	--/--	----			--
23	031000Z	12.7N 124.5E	VW-R-P--	700MB	---	---	---	---	--/--	----			--
24	031000Z	12.6N 124.8E	LND RDR		---	---	---	---	--/--	----			--

EYE FIXES CYCLONE 37

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	031130Z	12.8N 124.4E	VW-R-P01	700MB	090	---	956	2695	15/15	CIRC	----	12	08
26	031300Z	12.8N 124.2E	VW-R-P02	700MB	---	---	---	---	--/--	----			--
27	031530Z	12.9N 123.9E	VW-R-P02	700MB	---	---	---	---	--/--	CIRC	----	18	05
28	032100Z	13.7N 122.7E	LND RDR		---	---	---	---	--/--	----			--
29	032215Z	13.9N 122.4E	54-P-P02	500MB	080	---	---	---	--/--	----			--
30	040117Z	14.3N 121.7E	LND RDR		---	---	---	---	--/--	----			--
31	040325Z	14.3N 121.3E	54-P-P03	500MB	075	---	---	---	--/--	----			--
32	040400Z	14.1N 121.3E	LND RDR		---	---	---	---	--/--	----			--
33	040630Z	14.8N 120.6E	LND RDR		---	---	---	---	--/--	----			--
34	040730Z	14.9N 120.5E	LND RDR		---	---	---	---	--/--	----			--
35	040830Z	15.0N 120.2E	LND RDR		---	---	---	---	--/--	----			--
36	040900Z	15.0N 120.2E	LND RDR		---	---	---	---	--/--	----			--
37	040930Z	15.3N 120.0E	LND RDR		---	---	---	---	--/--	----			--
38	040947Z	15.2N 119.9E	LND RDR		---	---	---	---	--/--	----			--
39	041004Z	15.5N 119.9E	VW-R-P05	2300M	035	045	---	---	--/--	CIRC	----	20	--
40	041100Z	15.5N 119.6E	LND RDR		---	---	---	---	--/--	----			--
41	041531Z	16.0N 118.8E	VW-R-P05	700MB	070	---	---	---	--/--	CIRC	----	18	--
42	042219Z	16.2N 117.7E	54-P-P02	700MB	057	050	980	2919	14/--	----			--
43	050300Z	16.2N 117.2E	54-P-P02	700MB	047	055	983	2932	12/--	----			--
44	050935Z	17.1N 116.8E	VW-P-P03	0310M	070	070	982	---	--/--	CIRC	----	10	--
45	051615Z	17.6N 116.4E	VW-R-P03	0440M	056	035	---	---	--/--	CIRC	----	12	--
46	052101Z	17.8N 115.9E	VW-R-P02	0400M	073	045	---	---	--/--	CIRC	----	22	--
47	060420Z	17.9N 115.1E	54-P-P02	700MB	070	040	976	2899	14/--	CIRC	----	30	--
48	060413Z	18.0N 114.5E	SLTLS	STG X	DIA 02	BNDS 4							

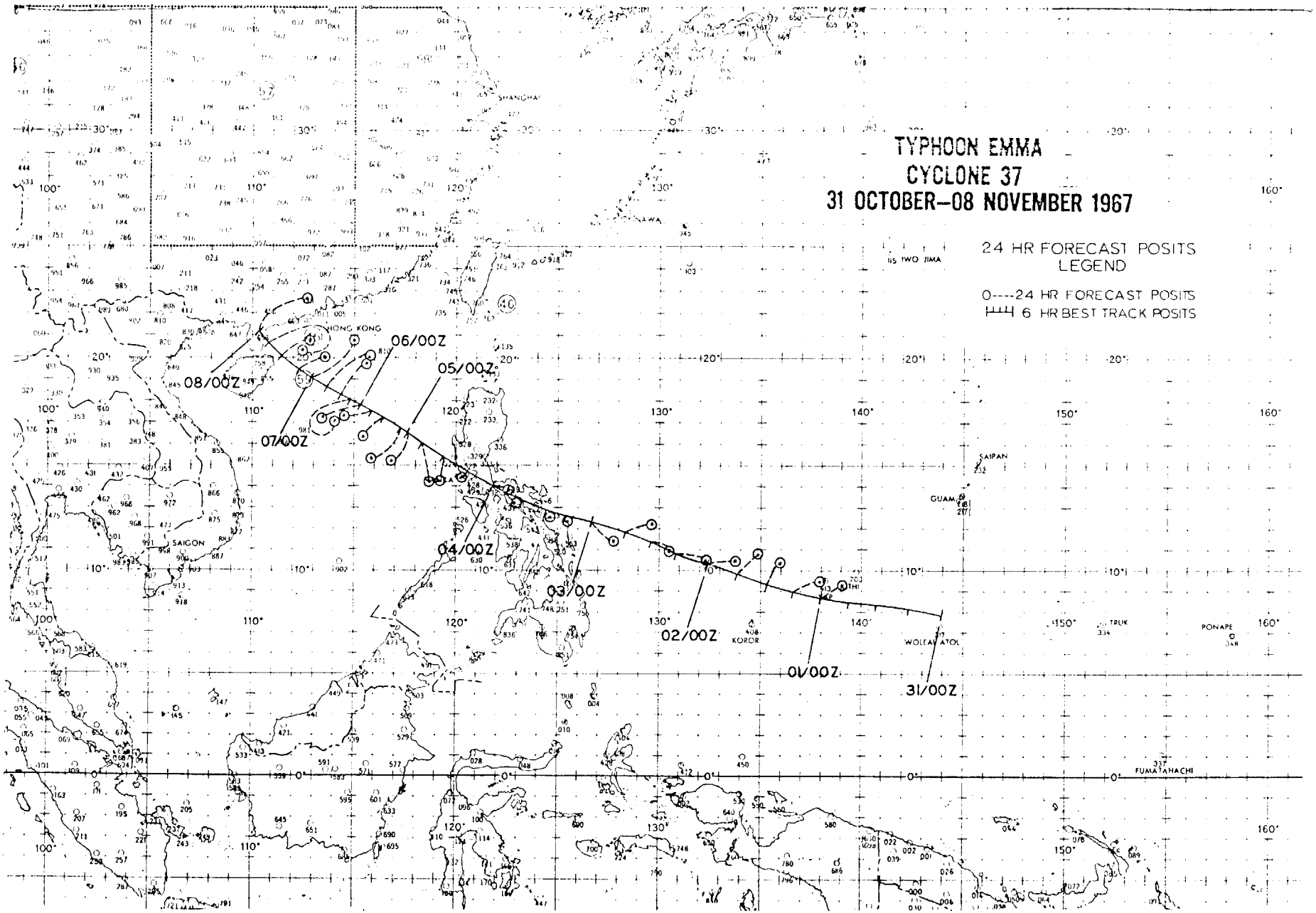
EYE FIXES CYCLONE 37

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	060907Z	18.2N 114.5E	54-P-P02	700MB	080	050	976	2862	14/--	CIRC	----	30	--
50	061628Z	18.4N 113.9E	VW-P-P10	700MB	090	---	---	2904	13/--	ELIP	NE-SW	45X25	03
51	062135Z	19.0N 113.2E	VW-R-P10	700MB	060	---	---	---	--/--	ELIP	NE-SW	30X15	--
52	070400Z	19.4N 112.5E	54-P-P10	700MB	085	---	---	2862	13/--	CIRC	----	30	--
53	070503Z	19.5N 112.0E	SLTLS	STG X	DIA 03	BNDS 4							

TROPICAL CYCLONE 37 -- 10/31/0000Z TO 11/06/0000Z
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.
310000Z	07.8N	143.9E	--------	--------	--------
310600Z	08.1N	142.2E	--------	--------	--------
311200Z	08.3N	140.7E	--------	--------	--------
311800Z	08.4N	139.3E	--------	--------	--------
010000Z	08.6N	137.9E	064-0066	--------	--------
010600Z	09.0N	136.6E	072-0072	--------	--------
011200Z	09.3N	135.2E	031-0066	--------	--------
011800Z	09.7N	133.7E	046-0084	--------	--------
020000Z	10.2N	132.3E	086-0072	084-0156	--------
020600Z	10.7N	130.9E	109-0066	082-0168	--------
021200Z	11.3N	129.5E	113-0054	070-0132	--------
021800Z	11.8N	128.1E	075-0084	073-0162	--------
030000Z	12.1N	126.6E	120-0066	087-0204	--------
030600Z	12.6N	125.3E	180-0018	099-0186	085-0270
031200Z	12.9N	124.2E	146-0018	106-0102	--------
031800Z	13.4N	123.1E	252-0018	096-0108	069-0222
040000Z	14.0N	121.9E	111-0030	126-0108	--------
040600Z	14.7N	120.6E	234-0030	174-0060	100-0252
041200Z	15.5N	119.3E	189-0084	166-0102	--------
041800Z	16.1N	118.3E	171-0120	193-0108	131-0204
050000Z	16.4N	117.6E	209-0084	176-0096	--------
050600Z	16.7N	117.1E	219-0102	231-0132	191-0132
051200Z	17.2N	116.4E	229-0072	223-0192	--------
051800Z	17.4N	115.9E	270-0090	205-0168	228-0228
060000Z	17.7N	115.4E	259-0114	241-0228	--------
060600Z	18.0N	114.8E	218-0066	237-0228	244-0276
061200Z	18.3N	114.3E	037-0108	248-0174	--------
061800Z	18.7N	113.7E	053-0126	269-0192	223-0264
070000Z	19.2N	113.0E	049-0144	257-0204	--------
070600Z	19.6N	112.3E	071-0066	222-0126	233-0354
071200Z	20.1N	111.5E	058-0078	051-0396	--------
071800Z	20.7N	110.8E	102-0084	056-0378	257-0258

AVERAGE 24 HOUR ERROR - 0074 MI.
AVERAGE 48 HOUR ERROR - 0171 MI.
AVERAGE 72 HOUR ERROR - 0246 MI.


TYPHOON EMMA
CYCLONE 37
31 OCTOBER–08 NOVEMBER 1967
24 HR FORECAST POSITS
LEGEND
0----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
08/00Z
07/00Z
06/00Z
05/00Z
04/00Z
03/00Z
02/00Z
01/00Z
31/00Z
HONG KONG
SAIGON
SHANGHAI
IWO JIMA
SAIPAN
GUAM
KOROR
WOLEAI ATOL
TRUK
PONAPE
FUMATAHACHI

TROPICAL CYCLONE 38 - 11/07/0600Z TO 11/10/0000Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 12
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 07
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 1044 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 971MBS AT 090940Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2917M. AT 090415Z
3. MAXIMUM SURFACE WIND - 085 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 250 MI

II. DEVELOPMENT

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

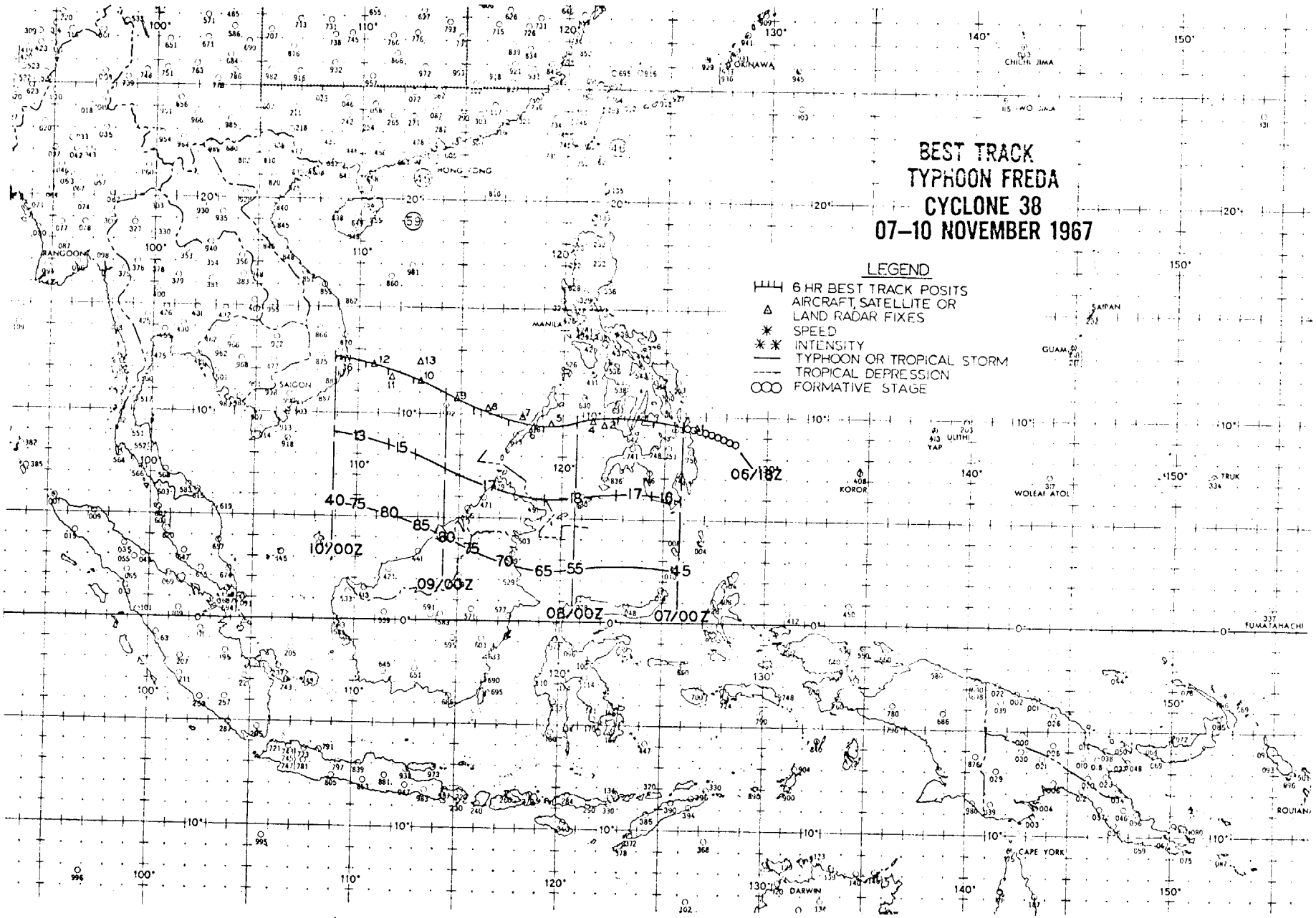
B. INITIAL SURFACE VORTEX

1. INDUCED VORTEX AT 061800Z
2. SURFACE PRESSURE LESS THAN 1006MB

C. 200MB FLOW ABOVE SURFACE VORTEX

1. INITIAL - FAST
2. UPON REACHING TYPHOON INTENSITY - EAST

III. FINAL DISPOSITION - DISSIPATED OVER LAND


BEST TRACK
TYPHOON FREDA
CYCLONE 38
07–10 NOVEMBER 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
06/18Z
07/00Z
08/00Z
09/00Z
10/00Z
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
RANGOON
MANILA
SAIGON
SAIPAN
GUAM
ULITHI
YAP
KOROR
WOLEAI ATOL
TRUK
FUMATAHACHI
ROUIAN
CAPE YORK
DARWIN

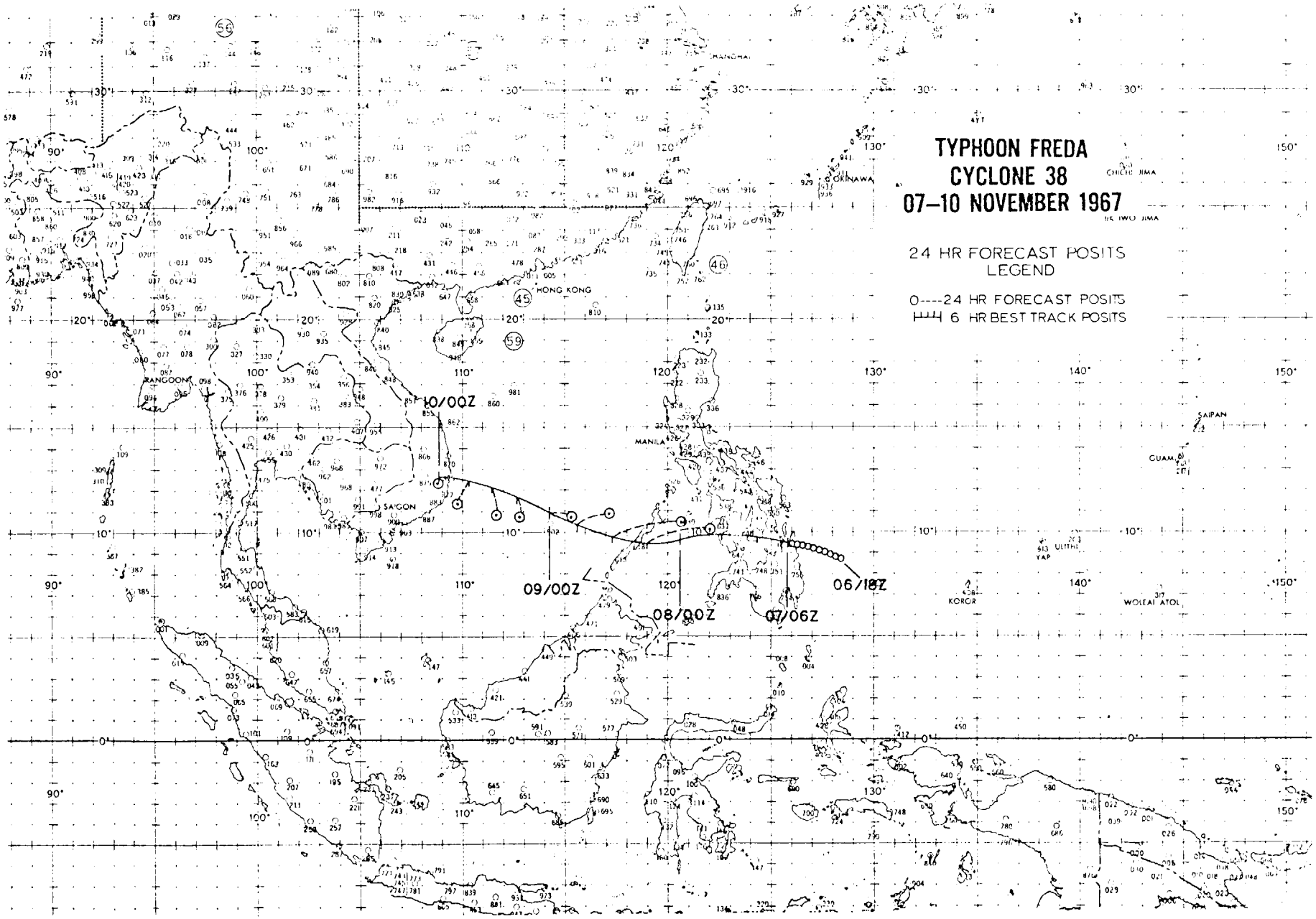
EYE FIXES CYCLONE 38

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	070322Z	09.3N 126.4E	54-P-F02	500MB	055	045	---	---	--/--	ELIP	N-S	20X10	N.F.B.
2	070459Z	08.0N 124.0E	SLTLS	STG X	DIA 03	BNDS 2							
3	071700Z	09.5N 122.0E	VW-P-L--	700MB	---	---	---	3062	--/--	----			--
4	072145Z	09.8N 121.3E	VW-P-P02	700MB	065	070	979	3065	13/--	CIRC	----	20	N.F.B.
5	080415Z	09.6N 119.2E	54-P-P03	500MB	075	---	---	---	--/--	CIRC	----	20	--
6	080549Z	09.5N 118.5E	SLTLS	STG X	DIA 04	BNDS 2							
7	080913Z	09.9N 118.0E	54-P-P05	500MB	070	060	984	2939	13/13	ELIP	N-S	20X09	--
8	081530Z	10.3N 116.2E	VW-P-P10	0380M	065	045	987	3120	09/00	CIRC	----	25	04
9	082130Z	10.7N 114.9E	VW-P-P10	700MB	060	---	---	---	--/--	CIRC	----	18	06
10	090415Z	11.5N 113.0E	54-P-P03	700MB	095	110	976	2917	18/17	CIRC	----	25	--
11	090445Z	12.5N 113.0E	SLTLS	STG X	DIA 04	BNDS 3							
12	090940Z	11.8N 111.7E	54-P-P04	700MB	085	120	971	---	18/--	CIRC	----	20	--
13	091600Z	12.3N 110.7E	VW-P-P03	0310M	085	090	977	---	--/--	CIRC	----	19	--
14	091800Z	12.4N 110.3E	VW-R-P--	700MB	---	---	---	---	--/--	----			--
15	091830Z	12.5N 110.1E	VW-R-P--	700MB	---	---	---	---	--/--	----			--
16	092030Z	12.5N 109.4E	VW-R-P01	700MB	---	---	---	---	--/--	CIRC	----	20	--

TROPICAL CYCLONE 38 -- 11/07/0600Z TO 11/10/0000Z
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.
070600Z	09.5N	125.9E	--------	--------	--------
071200Z	09.8N	124.3E	--------	--------	--------
071800Z	09.8N	122.5E	--------	--------	--------
080000Z	09.6N	120.8E	--------	--------	--------
080600Z	09.5N	119.0E	081-0174	--------	--------
081200Z	09.9N	117.4E	085-0192	--------	--------
081800Z	10.4N	115.7E	069-0078	--------	--------
090000Z	11.0N	114.2E	109-0066	--------	--------
090600Z	11.5N	112.7E	173-0054	099-0312	--------
091200Z	12.0N	111.4E	170-0072	103-0282	--------
091800Z	12.4N	110.3E	202-0060	094-0144	--------
100000Z	12.8N	108.9E	180-0018	122-0168	--------

AVERAGE 24 HOUR ERROR - 0089 MI.
AVERAGE 48 HOUR ERROR - 0226 MI.
AVERAGE 72 HOUR ERROR - ---- MI.


TYPHOON FREDA
CYCLONE 38
07–10 NOVEMBER 1967
24 HR FORECAST POSITS
LEGEND
0----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
10/00Z
09/00Z
08/00Z
07/06Z
06/18Z
HONG KONG
MANILA
SAIGON
RANGOON
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
ULITHI
YAP
KOROR
WOLEAI ATOL

TROPICAL CYCLONE 39 - 11/08/0600Z TO 11/18/1800Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 45
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 32
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 2580 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 890MBS AT 140400Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2270M. AT 140400Z
3. MAXIMUM SURFACE WIND - 130 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 600 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - FRACTURE OF A POLAR TROUGH AND AN EASTERLY WAVE

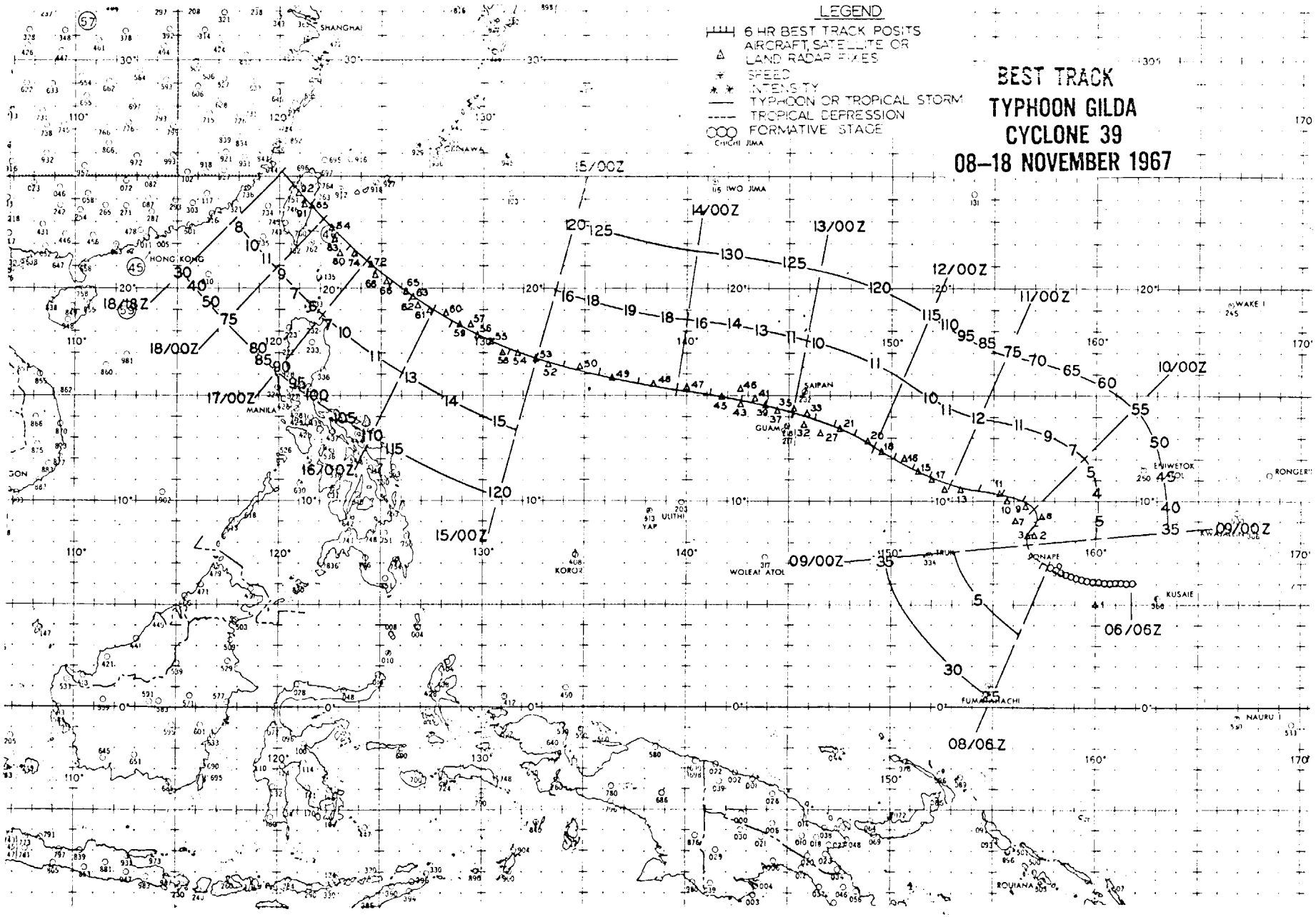
B. INITIAL SURFACE VORTEX

1. JUNCTION VORTEX AT 060600Z
2. SURFACE PRESSURE LESS THAN 1004MB

C. 200MB FLOW ABOVE SURFACE VORTEX

1. INITIAL - SOUTHWEST
2. UPON REACHING TYPHOON INTENSITY - NORTHEAST

III. FINAL DISPOSITION - DISSIPATED OVER WATER


BEST TRACK
TYPHOON GILDA
CYCLONE 39
08–18 NOVEMBER 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
SHANGHAI
OKINAWA
HONG KONG
MANILA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
IWO JIMA
CHICHI JIMA
WAKE I
ENIWETOK
RONGERIK
PONAPE
KUSAIE
NAURU I
ROUIANA
18/18Z
18/00Z
17/00Z
16/00Z
15/00Z
14/00Z
13/00Z
12/00Z
11/00Z
10/00Z
09/00Z
06/06Z
08/06Z

EYE FIXES CYCLONE 39

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	080200Z	05.0N 160.0E	SLTLS	STG C	DIA --	BNDS -							
2	082132Z	08.5N 157.0E	SLTLS	STG -	DIA --	BNDS -							
3	090150Z	08.5N 156.8E	54-P-P15		---	---	999	---	--/--	----			--
4	090250Z	09.0N 156.0E	SLTLS	STG X	DIA 05	BNDS 2							
5	090425Z	08.5N 156.9E	54-P-P15	700MB	045	040	998	3033	11/--	----			F.B.
6	090950Z	08.3N 157.0E	VW-P-P10	0380M	026	030	995	---	--/--	CIRC	----	80	--
7	091540Z	08.6N 156.1E	VW-P-P05	0350M	032	035	991	3027	--/--	CIRC	----	90	--
8	092220Z	09.3N 157.2E	54-P-P05	700MB	045	040	988	2990	12/--	CIRC	----	20	--
9	100140Z	09.5N 156.0E	SLTLS	STG X	DIA 05	BNDS 2							
10	100409Z	09.8N 156.6E	54-P-P02	700MB	050	050	977	2920	16/--	CIRC	----	10	--
11	100952Z	10.0N 155.7E	VW-P-P05	0290M	070	060	982	---	--/--	ELIP	NW-SE	35X20	--
12	101540Z	10.4N 155.3E	VW-P-P05	0360M	060	055	981	2956	13/10	ELIP	NW-SE	70X50	--
13	102135Z	10.5N 153.4E	54-P-P01	700MB	055	070	975	2896	21/12	----			--
14	110300Z	10.7N 152.5E	54-P-P05	700MB	065	080	968	2822	19/--	----			--
15	110949Z	11.3N 151.2E	VW-P-P03	0190M	080	085	967	---	--/--	ELIP	NE-SW	70X55	06
16	111555Z	12.0N 150.6E	VW-P-P05	0230M	105	100	961	2835	16/--	CIRC	----	64	15
17	110236Z	11.0N 152.0E	SLTLS	STG X	DIA 06	BNDS 3							
18	112045Z	12.4N 149.5E	54-R-F10	700MB	---	---	---	---	--/--	----			--
19	112355Z	12.6N 149.3E	54-P-P03	700MB	080	130	964	2789	17/--	CIRC	----	20	--
20	120327Z	13.0N 148.5E	SLTLS	STG X	DIA 05	BNDS 3							
21	120346Z	12.9N 148.9E	54-P-P15	700MB	070	075	963	2783	18/--	ELIP	NW-SE	50X20	--
22	120900Z	13.3N 147.7E	LND RDR		---	---	---	---	--/--	----			--
23	120930Z	13.4N 147.6E	LND RDR		---	---	---	---	--/--	----			--
24	120955Z	13.4N 147.4E	VW-P-P03	0230M	100	100	953	---	--/--	ELIP	NW-SE	40X30	04

EYE FIXES CYCLONE 39

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	121000Z	13.4N 147.4E	LND RDR		---	---	---	---	--/--	----			--
26	121100Z	13.4N 147.1E	LND RDR		---	---	---	---	--/--	----			--
27	121200Z	13.4N 146.7E	LND RDR		---	---	---	---	--/--	----			--
28	121400Z	13.4N 146.5E	LND RDR		---	---	---	---	--/--	----			--
29	121452Z	13.6N 146.3E	VW-R-F05	700MB	---	---	---	---	--/--	----			--
30	121500Z	13.5N 146.3E	LND RDR		---	---	---	---	--/--	----			--
31	121600Z	13.5N 146.3E	VW-P-P02	700MB	075	045	958	2477	19/10	CIRC	----	21	--
32	122200Z	14.1N 145.6E	LND RDR		---	---	---	---	--/--	CIRC	----	27	--
33	122000Z	13.8N 145.9E	LND RDR		---	---	---	---	--/--	CIRC	----	28	15
34	122212Z	14.0N 145.6E	54-P-P01	700MB	080	075	943	2597	19/--	CIRC	----	21	--
35	122300Z	14.2N 145.4E	LND RDR		---	---	---	---	--/--	CIRC	----	22	--
36	130000Z	14.3N 145.1E	LND RDR		---	---	---	---	--/--	CIRC	----	21	--
37	130227Z	14.0N 144.5E	SLTLS	STG X	DIA 04	BNDS 3							
38	130230Z	14.4N 144.3E	LND RDR		---	---	---	---	--/--	----			--
39	130400Z	14.3N 144.3E	54-P-P01	700MB	120	100	920	2432	22/--	CIRC	----	20	10
40	130650Z	14.6N 143.9E	LND RDR		---	---	---	---	--/--	----			--
41	130900Z	14.6N 143.3E	VW-R-P--		---	---	---	---	--/--	----			--
42	131000Z	14.9N 143.2E	LND RDR		---	---	---	---	--/--	----			--
43	131000Z	14.7N 143.5E	VW-R-P05	0400M	---	---	---	---	--/--	CIRC	----	24	08
44	131200Z	14.8N 142.7E	VW-R-P--	700MB	---	---	---	---	--/--	CIRC	----	18	08
45	131300Z	15.2N 142.5E	LND RDR		---	---	---	---	--/--	----			--
46	131600Z	14.9N 141.7E	VW-R-P05	700MB	---	---	---	---	--/--	CIRC	----	18	06
47	132148Z	15.3N 140.0E	54-P-P03	700MB	090	130	909	2286	26/--	CIRC	----	20	--
48	140318Z	15.5N 138.5E	SLTLS	STG X	DIA 06	BNDS 4							

EYE FIXES CYCLONE 39

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	162020Z	20.9N 124.7E	VW-R-P05	700MB	---	---	---	---	--/--	----			--
74	162100Z	21.1N 124.5E	VW-P-P02	700MB	060	045	972	2666	17/15	CIRC	----	18	--
75	170300Z	21.1N 124.1E	54-P-P01	700MB	060	045	955	2707	16/--	----			F.B.
76	170354Z	21.5N 124.0E	SLTLS	STG X	DIA 05	BNDS 3							
77	170600Z	21.7N 123.7E	LND RDR		---	---	---	---	--/--	----			--
78	170600Z	21.6N 123.7E	54-P-P01	700MB	075	050	955	2691	15/--	----			F.B.
79	170900Z	21.3N 123.2E	LND RDR		---	---	---	---	--/--	----			--
80	170900Z	21.8N 123.5E	54-P-P01	700MB	075	050	955	2688	14/--	----			F.B.
81	171025Z	21.6N 123.6E	LND RDR		---	---	---	---	--/--	----			--
82	171125Z	21.8N 123.0E	LND RDR		---	---	---	---	--/--	----			--
83	171200Z	21.8N 122.9E	LND RDR		---	---	---	---	--/--	----			--
84	171600Z	22.1N 123.1E	VW-P-F10	700MB	---	---	953	2710	14/--	----			--
85	171800Z	22.4N 122.7E	VW-P-P10	700MB	---	---	---	2740	14/--	----			--
86	172030Z	22.8N 122.5E	VW-P-F05	700MB	---	---	---	2734	14/--	ELIP	N-S	40X30	--
87	172200Z	22.9N 122.2E	LND RDR		---	---	---	---	--/--	----			--
88	180200Z	23.8N 121.7E	LND RDR		---	---	---	---	--/--	----			--
89	180000Z	23.1N 122.5E	LND RDR		---	---	---	---	--/--	----			--
90	180249Z	23.9N 121.5E	54-R-P10	4880M	045	---	---	---	--/--	CIRC	----	20	--
91	180445Z	24.5N 121.0E	SLTLS	STG X	DIA 04	BNDS 2							
92	180555Z	23.9N 121.2E	54-P-P08	8250M	035	---	---	---	--/--	----			--
93	180846Z	24.2N 120.9E	54-P-F10	7610M	050	---	---	---	--/--	----			N.F.B.

EYE FIXES CYCLONE 39

FIX NO.	TIME	POSIT	UNIF-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	140400Z	15.5N 138.2E	54-P-P03	700MB	112	100	890	2270	19/--	CIRC	----	18	--
50	141000Z	15.9N 136.3E	VW-P-P03	700MB	110	---	910	2627	17/15	CONC		70-14	--
51	141500Z	16.3N 134.7E	VW-R-P10	700MB	---	---	---	---	--/--	CONC		65-19	--
52	142200Z	16.6N 133.1E	54-P-P02	700MB	080	080	919	2277	17/--	CIRC	----	25	--
53	150000Z	16.8N 132.6E	54-P-P01	700MB	125	100	---	---	--/--	----			--
54	150300Z	17.0N 131.8E	54-P-P01	700MB	130	100	919	2350	20/--	CIRC	----	40	--
55	150408Z	17.0N 131.0E	SLTLS	STG X	DIA 05	BNDS 4							
56	151030Z	17.6N 130.2E	VW-P-P03	700MB	085	---	928	2405	20/--	CIRC	----	35	--
57	151200Z	17.9N 129.8E	VW-R-F--		---	---	---	---	--/--	----			--
58	151300Z	18.0N 129.8E	VW-R-P--		---	---	---	---	--/--	----			--
59	151400Z	18.1N 129.5E	VW-R-P--		---	---	---	---	--/--	----			--
60	151500Z	18.3N 129.2E	VW-R-F--		---	---	---	---	--/--	----			--
61	151600Z	18.3N 128.9E	VW-P-P03	700MB	070	---	926	2432	19/--	ELIP	N-S	40X30	05
62	152120Z	18.9N 128.1E	54-P-P03	700MB	095	---	928	2481	24/--	CIRC	----	30	10
63	160053Z	19.0N 127.3E	54-P-P03	700MB	090	085	931	2512	18/--	CIRC	----	30	--
64	160313Z	19.2N 126.9E	54-P-P03	700MB	090	100	937	2548	18/--	CIRC	----	30	--
65	160533Z	19.6N 126.5E	54-P-P03	700MB	090	100	937	2859	17/--	CIRC	----	30	--
66	160630Z	19.6N 126.3E	ACFT RDR		---	---	---	---	--/--	----			--
67	160900Z	19.9N 126.1E	VW-R-P05	0300M	---	---	---	---	--/--	CIRC	----	08	08
68	161412Z	20.3N 125.1E	VW-R-P10	0400M	---	---	---	---	--/--	----			--
69	161500Z	20.4N 125.0E	VW-R-P04	0430M	100	085	---	---	--/--	CIRC	----	20	09
70	161600Z	20.6N 125.1E	VW-R-P--		---	---	---	---	--/--	----			--
71	161700Z	20.6N 124.8E	VW-R-P--		--	---	---	---	--/--	----			--
72	161800Z	20.7N 124.8E	VW-P-P02	700MB	0	045	951	2643	12/09	CIRC	----	30	0

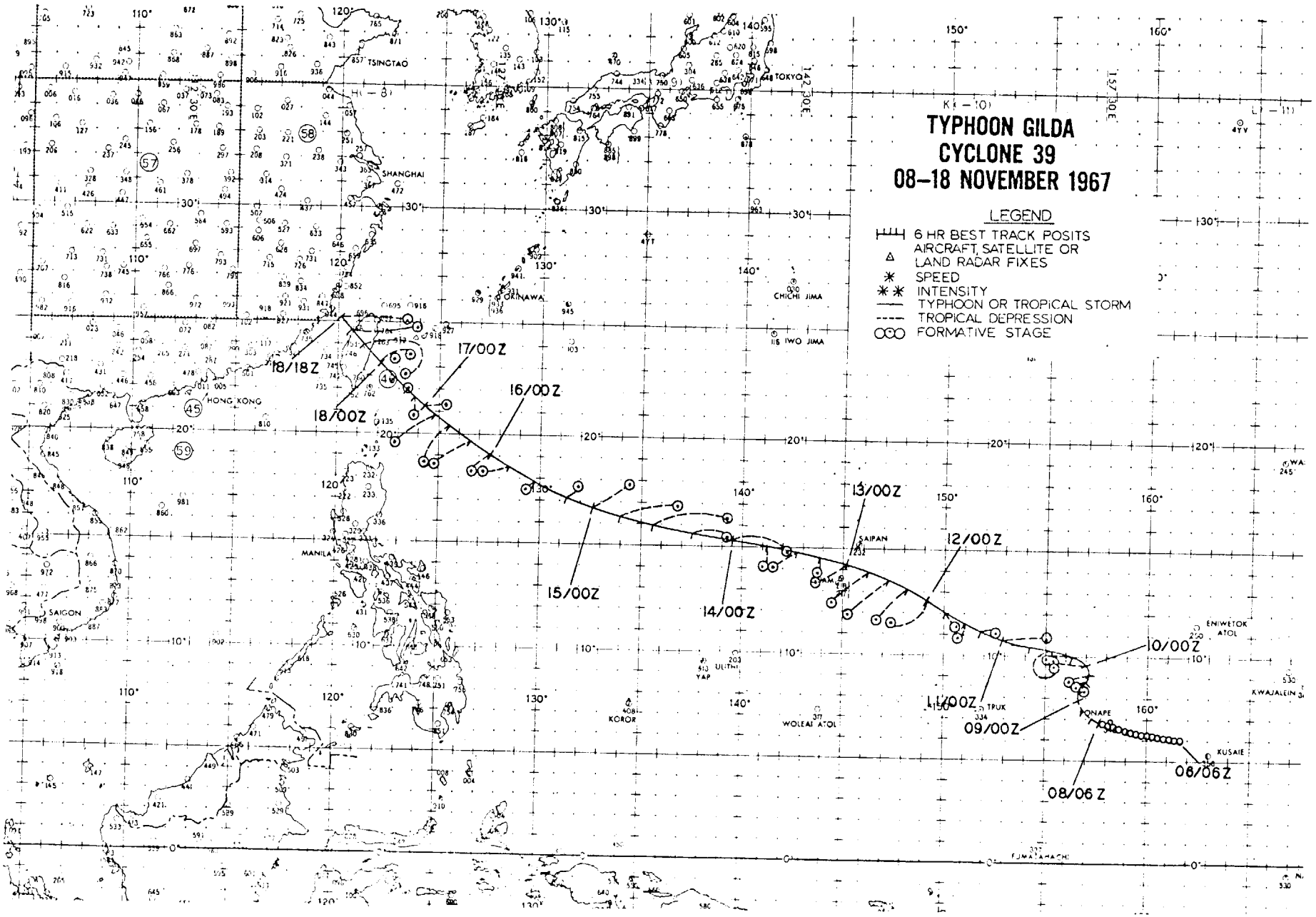
TROPICAL CYCLONE 39 -- 11/08/06007 TO 11/18/1800Z
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DIST.	48 HR. ERROR DEG. DIST.	72 HR. ERROR DEG. DIST.
090000Z	07.8N	156.7E	--------	--------	--------
090600Z	08.3N	156.8E	116-0012	--------	--------
091200Z	08.7N	156.9E	217-0030	--------	--------
091800Z	09.0N	157.1E	244-0048	--------	--------
100000Z	09.6N	157.0E	277-0096	--------	--------
100600Z	10.0N	156.3E	266-0072	--------	--------
101200Z	10.3N	155.3E	180-0036	--------	--------
101800Z	10.4N	154.1E	214-0018	--------	--------
110000Z	10.6N	152.9E	085-0120	--------	--------
110600Z	11.1N	151.9E	101-0030	270-0090	--------
111200Z	11.6N	151.0E	189-0042	199-0036	--------
111800Z	12.1N	150.1E	147-0054	226-0072	--------
120000Z	12.7N	149.1E	237-0126	144-0102	--------
120600Z	13.1N	148.1E	221-0114	201-0102	246-0240
121200Z	13.5N	147.1E	229-0144	227-0144	--------
121800Z	13.9N	146.1E	226-0144	206-0138	230-0234
130000Z	14.2N	145.1E	233-0096	242-0258	--------
130600Z	14.5N	143.9E	180-0048	234-0228	227-0198
131200Z	14.7N	142.7E	238-0078	234-0252	--------
131800Z	15.0N	141.1E	180-0060	226-0234	222-0216
140000Z	15.3N	139.4E	104-0162	238-0078	--------
140600Z	15.7N	137.6E	101-0090	128-0102	224-0258
141200Z	16.1N	135.7E	089-0198	180-0042	--------
141800Z	16.4N	134.0E	080-0156	119-0144	206-0234
150000Z	16.7N	132.6E	060-0114	102-0372	--------
150600Z	17.2N	131.2E	051-0042	089-0234	114-0204
151200Z	17.8N	129.8E	249-0030	090-0318	--------
151800Z	18.5N	128.4E	261-0072	081-0282	113-0240
160000Z	19.0N	127.4E	218-0066	068-0234	--------
160600Z	19.6N	126.4E	237-0108	093-0102	084-0342
161200Z	20.3N	125.4E	210-0108	229-0144	--------
161800Z	20.7N	124.7E	238-0120	253-0192	073-0354
170000Z	21.1N	124.2E	085-0060	234-0198	--------
170600Z	21.5N	123.7E	170-0036	245-0258	093-0090

TROPICAL CYCLONE 39 -- 11/08/0600Z TO 11/18/1800Z
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.
171200Z	21.9N	123.2E	046-0006	239-0252	--------
171800Z	22.4N	122.7E	007-0054	247-0282	246-0330
180000Z	23.1N	122.1E	072-0072	103-0102	--------
180600Z	23.9N	121.1E	124-0144	134-0132	240-0444
181200Z	24.5N	120.5E	085-0186	104-0138	--------

AVERAGE 24 HOUR ERROR - 0084 MI.
AVERAGE 48 HOUR ERROR - 0175 MI.
AVERAGE 72 HOUR ERROR - 0260 MI.


TYPHOON GILDA
CYCLONE 39
08–18 NOVEMBER 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
08/06Z
09/00Z
10/00Z
11/00Z
12/00Z
13/00Z
14/00Z
15/00Z
16/00Z
17/00Z
18/00Z
18/18Z
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
ENIWETOK ATOL
KWAJALEIN
FUMATAHACHI

TROPICAL CYCLONE 40 - 11/17/0000Z TO 11/24/0000Z

I. DATA

A. STATISTICS

1. NUMBER OF WARNINGS ISSUED - 29
2. NUMBER OF WARNINGS WITH TYPHOON INTENSITY - 15
3. TOTAL DISTANCE TRAVELED DURING TROPICAL WARNING PERIOD - 2028 MI

B. CHARACTERISTICS AS A TYPHOON

1. MINIMUM OBSERVED SLP - 953MBS AT 202100Z
2. MINIMUM OBSERVED 700MB HEIGHT - 2691M. AT 202100Z
3. MAXIMUM SURFACE WIND - 110 KTS (FROM BEST TRACK)
4. MAXIMUM RADIUS OF SURFACE CIRCULATION - 275 MI

II. DEVELOPMENT

A. INITIAL IMPETUS - LOW LEVEL SURGE INTO CYCLONIC CIRCULATION FROM THE SOUTH WITH SUBSEQUENT DIVERGENCE AT 200MB LEVEL

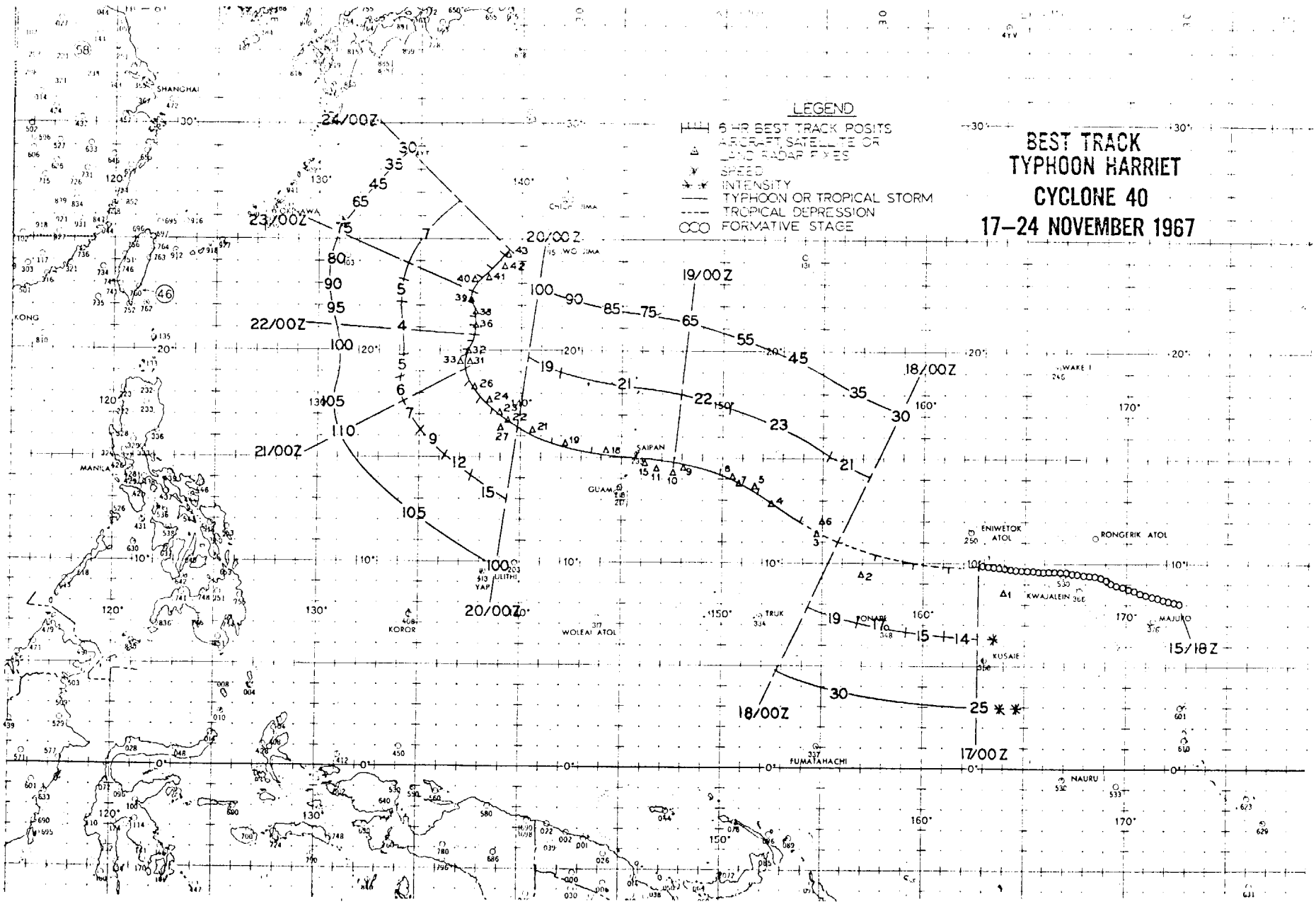
B. INITIAL SURFACE VORTEX

1. JUNCTION VORTEX AT 151800Z
2. SURFACE PRESSURE LESS THAN 1007MB

C. 200MB FLOW ABOVE SURFACE VORTEX

1. INITIAL - FAST
2. UPON REACHING TYPHOON INTENSITY - NORTHEAST

III. FINAL DISPOSITION - DISSIPATED [illegible] WATER


BEST TRACK
TYPHOON HARRIET
CYCLONE 40
17–24 NOVEMBER 1967
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT, SATELLITE OR LAND RADAR FIXES
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
24/00Z
23/00Z
22/00Z
21/00Z
20/00Z
19/00Z
18/00Z
17/00Z
15/18Z
SHANGHAI
MANILA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
FUMATAHACHI
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
NAURU
WAKE I

EYE FIXES CYCLONE 40

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	170155Z	08.5N 164.0E	SLTLS	STG C	DIA --	BNDS -							
2	172113Z	09.5N 157.0E	SLTLS	STG -	DIA --	BNDS -							
3	180245Z	12.0N 155.0E	SLTLS	STG C	DIA 02	BNDS -							
4	180316Z	11.4N 154.8E	54-P-P03	0400M	026	025	004	---	--/--	----			--
5	180915Z	12.8N 152.2E	VW-P-P10	0320M	---	045	992	---	--/--	CIRC	----	10	05
6	181300Z	13.6N 151.6E	VW-R-P10	0810M	---	---	---	---	--/--	----			--
7	181521Z	13.9N 150.9E	VW-P-P05	0400M	---	050	982	---	--/--	ELIP	NE-SW	14X10	03
8	181815Z	14.1N 150.5E	VW-R-F08	0400M	---	---	---	---	--/--	ELIP	NW-SE	14X12	06
9	182245Z	14.5N 148.0E	54-P-P05	700MB	---	065	985	2954	12/--	CIRC	----	20	--
10	190015Z	14.3N 147.5E	LND RDR		---	---	---	---	--/--	----			--
11	190100Z	14.7N 146.8E	LND RDR		---	---	---	---	--/--	----			--
12	190100Z	14.7N 147.4E	54-P-P05	700MB	---	070	982	2920	13/--	CIRC	----	10	--
13	190200Z	14.7N 146.8E	LND RDR		---	---	---	---	--/--	----			--
14	190230Z	14.7N 146.6E	LND RDR		---	---	---	---	--/--	----			--
15	190336Z	15.0N 146.0E	SLTLS	STG C	DIA --	BNDS -							
16	190400Z	14.9N 146.1E	54-P-P01	700MB	068	070	978	2908	15/--	CIRC	----	10	--
17	190500Z	14.9N 145.7E	LND RDR		---	---	---	---	--/--	----			--
18	190600Z	15.0N 145.6E	LND RDR		---	---	---	---	--/--	----			--
19	191017Z	15.3N 144.1E	VW-P-P05	0240M	---	090	979	---	--/--	----			--
20	191601Z	15.7N 142.1E	VW-P-P05	700MB	---	---	970	2914	15/--	CIRC	----	18	04
21	192147Z	16.3N 140.6E	54-P-P02	700MB	085	075	963	2777	14/--	CIRC	----	20	--
22	200400Z	16.9N 139.4E	54-P-P01	700MB	082	080	977	2893	15/--	CIRC	----	25	--
23	200237Z	16.5N 139.0E	SLTLS	STG X	DIA 03	BNDS 4							
24	200500Z	17.1N 139.0E	54-R-P--		---	---	---	---	--/--	----			--

EYE FIXES CYCLONE 40

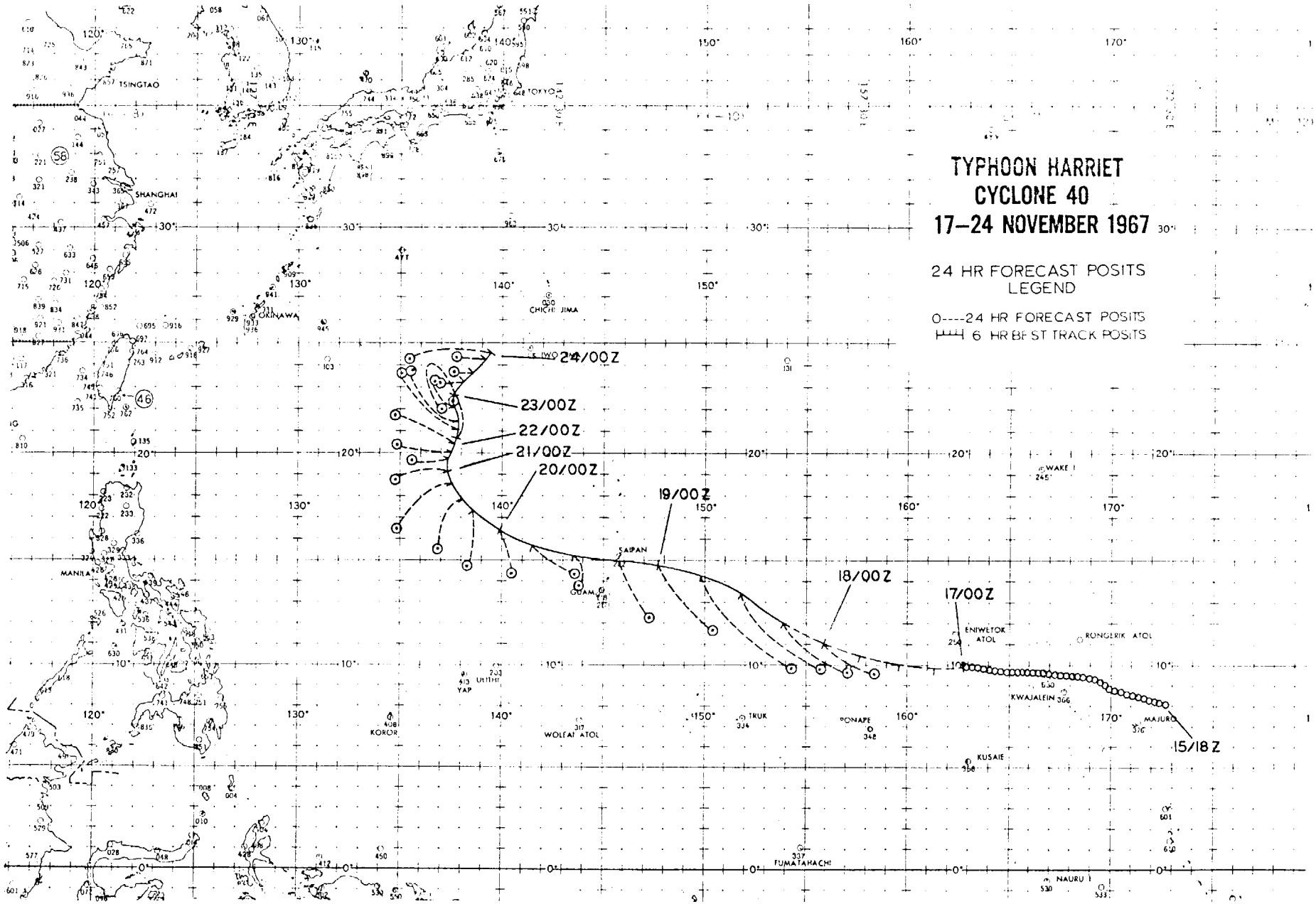
FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	EYE FORM	ORIEN-TATION	EYE DIA	THKNS WALL CLOUD
25	200930Z	17.8N 138.3E	VW-R-F15	0440M	---	---	---	---	--/--	----			--
26	200945Z	17.6N 138.5E	VW-R-P05	0440M	---	---	---	---	--/--	CIRC	----	15	--
27	201250Z	18.4N 137.8E	VW-R-P--	0380M	---	---	---	---	--/--	----			--
28	201500Z	18.2N 138.0E	ACFT RDR	6400M	---	---	---	---	--/--	----			--
29	201600Z	18.4N 137.6E	VW-R-P05	700MB	043	035	---	---	--/--	CIRC	----	12	05
30	202100Z	18.6N 137.4E	54-P-P03	700MB	040	100	953	2691	21/--	CIRC	----	15	--
31	210238Z	19.5N 137.3E	54-P-P03	700MB	103	110	953	2732	22/--	CIRC	----	10	05
32	210326Z	19.5N 137.0E	SLTLS	STG X	DIA 04	BNDS 4							
33	210900Z	20.0N 137.3E	VW-P-P05	0240M	---	080	967	---	--/--	CIRC	----	20	11
34	211500Z	20.3N 137.6E	VW-P-P05	0310M	072	080	972	---	--/--	CIRC	----	32	07
35	212200Z	20.2N 138.1E	54-P-P02	700MB	095	100	967	2847	22/--	CIRC	----	40	--
36	220400Z	21.1N 137.7E	54-P-P05	700MB	080	120	962	2841	18/--	CIRC	----	30	08
37	221030Z	21.3N 137.7E	VW-P-P03	700MB	---	---	980	2879	10/--	CIRC	----	25	08
38	221535Z	21.9N 137.8E	VW-R-P05	700MB	---	---	---	---	--/--	CIRC	----	25	05
39	222130Z	22.4N 137.5E	54-P-P05	700MB	085	080	974	2859	19/--	CIRC	----	30	--
40	230330Z	23.1N 137.7E	54-P-P05	700MB	100	120	975	2874	20/--	CIRC	----	30	--
41	230946Z	23.4N 138.3E	VW-P-P05	700MB	---	---	998	3048	21/--	ELIP	NE-SW	40X20	10
42	231624Z	23.9N 139.1E	VW-P-P05	0310M	035	---	002	3086	15/00	CIRC	----	30	08
43	232148Z	24.3N 139.3E	54-P-P02	700MB	027	030	006	3149	13/--	CIRC	----	40	--

TROPICAL CYCLONE 40 -- 11/17/0000Z TO 11/24/0000Z

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.
180600Z	11.9N	153.9E	127-0222	--------	--------
181200Z	13.3N	151.9E	133-0300	--------	--------
181800Z	14.2N	149.9E	135-0360	--------	--------
190000Z	14.5N	147.7E	140-0234	--------	--------
190600Z	15.0N	145.7E	155-0180	--------	--------
191200Z	15.4N	143.5E	172-0096	--------	--------
191800Z	15.9N	141.5E	130-0156	--------	--------
200000Z	16.6N	140.0E	172-0138	--------	--------
200600Z	17.3N	138.8E	191-0156	--------	--------
201200Z	17.9N	138.0E	202-0156	174-0234	--------
201800Z	18.6N	137.6E	230-0204	170-0252	--------
210000Z	19.1N	137.3E	258-0138	207-0282	--------
210600Z	19.7N	137.3E	270-0102	225-0360	--------
211200Z	20.0N	137.4E	274-0144	234-0402	--------
211800Z	20.3N	137.5E	299-0168	251-0468	209-0360
220000Z	20.7N	137.6E	352-0090	270-0402	--------
220600Z	21.0N	137.7E	038-0204	283-0264	246-0582
221200Z	21.4N	137.8E	046-0198	282-0282	--------
221800Z	22.0N	137.7E	073-0228	345-0186	264-0702
230000Z	22.8N	137.5E	101-0246	058-0354	--------
230600Z	23.3N	138.0E	089-0204	075-0636	324-0180
231200Z	23.5N	138.7E	090-0186	074-0630	--------
231800Z	24.1N	139.2E	087-0186	082-0642	044-0294

AVERAGE 24 HOUR ERROR - 0186 MI.
AVERAGE 48 HOUR ERROR - 0385 MI.
AVERAGE 72 HOUR ERROR - 0423 MI.


TYPHOON HARRIET
CYCLONE 40
17–24 NOVEMBER 1967
24 HR FORECAST POSITS
LEGEND
0----24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
24/00Z
23/00Z
22/00Z
21/00Z
20/00Z
19/00Z
18/00Z
17/00Z
15/18Z
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
MANILA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
WAKE I
FUMATAHACHI
NAURU I