CHAPTER V

INDIVIDUAL TYPHOONS OF 1965

TYPHOON PATSY - 191200Z TO 231200Z JANUARY

I. DATA

A. Statistics

1. Number of warnings issued - 17
2. Number of warnings with typhoon intensity - 6
3. Total distance traveled during tropical warning period - 619 mi.

B. Characteristics as a typhoon

1. Minimum observed SLP - 989mbs at 200607Z and 200930Z
2. Minimum observed 700mb height - 3008m. at 200607Z
3. Maximum surface wind - 65 kts (From Best Track)
4. Maximum radius of surface circulation - 375 mi

II. DEVELOPMENT

A. Initial impetus - Fracture of short wave trough in westerlies and subsequent surge in northeast flow

B. Initial surface vortex

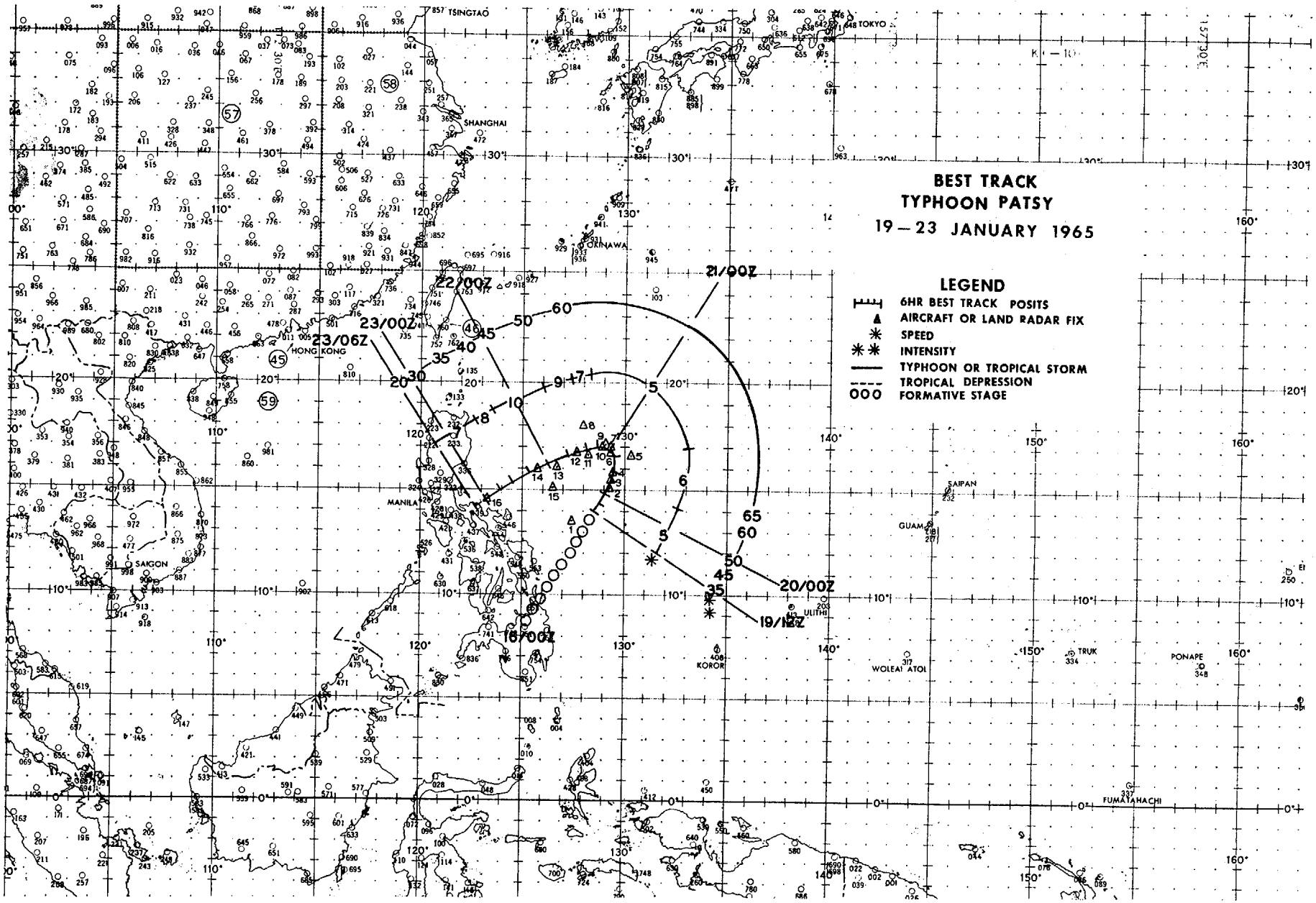
1. Embedded vortex at 160000Z
2. Surface pressure less than 1008mbs

C. 200mb flow above surface vortex

1. Initial-southeast
2. Upon reaching typhoon intensity - south

III. FINAL DISPOSITION

A. Dissipated over land


BEST TRACK
TYPHOON PATSY
19 – 23 JANUARY 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
TSINGTAO
TOKYO
SHANGHAI
OKINAWA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
KOROR
WOLEAI ATOL
TRUK
PONAPE
FUMA HACHI
21/00Z
22/00Z
23/06Z
20/00Z
19/12Z
18/00Z

EYE FIXES TYPHOON PATSY

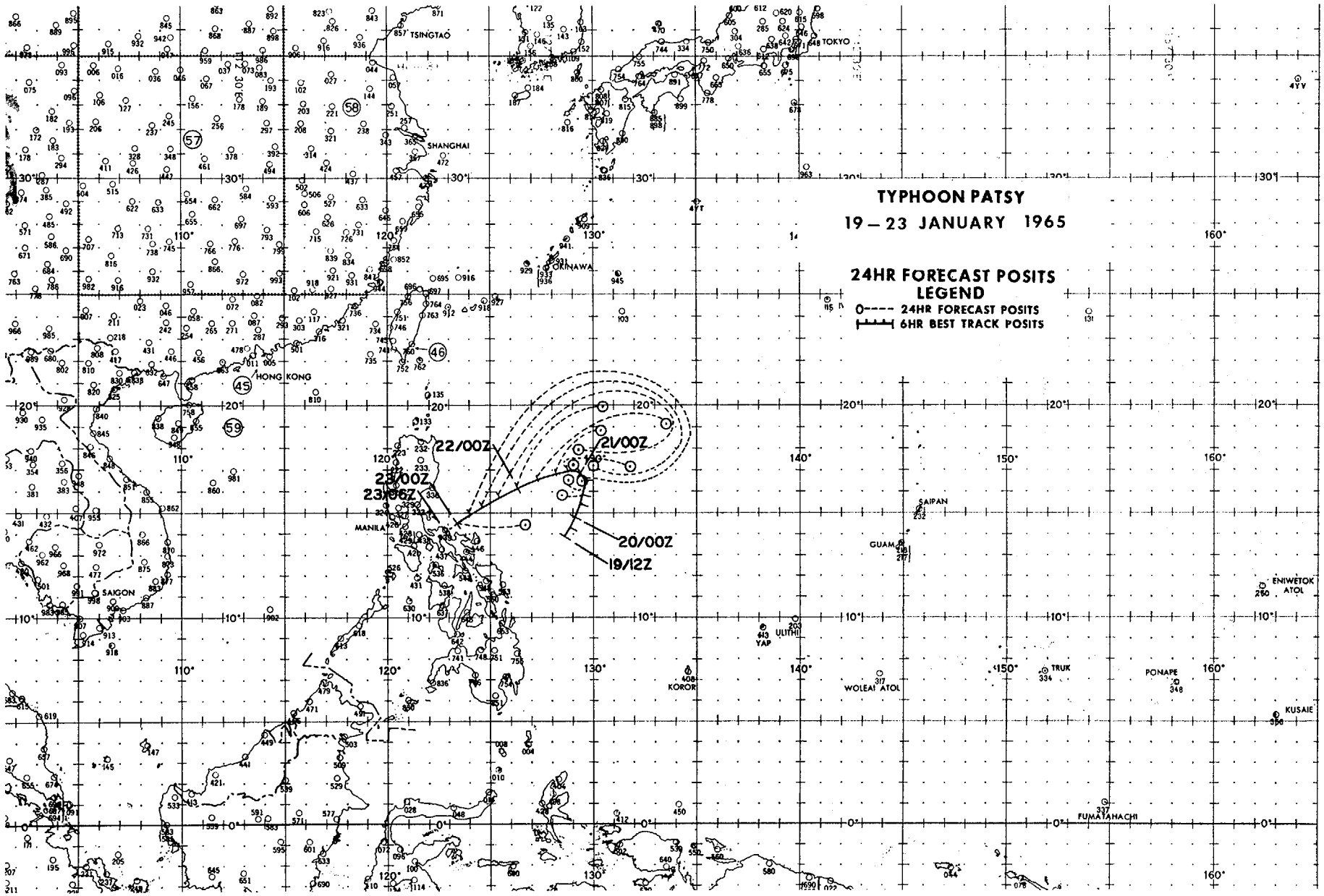
FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	190408Z	13.5N 127.5E	TIROS	--	--	--	--	---	--/--	
2	200420Z	15.1N 129.3E	54-R-5	30000ft	30	50	--	---	--/--	AREA OF NO RDR RETURN 10 MI DIA, NO WALL CLD
3	200607Z	15.4N 129.3E	56-P-1	694mb	35	30	989	3008	12/12	NO WALL CLDS, SFC CALM 30 MI DIA
4	200930Z	15.8N 129.4E	VW1-P-5	1000ft	--	55	989	---	24/20	CIRC 30 MI DIA, NEG WALL CLD, OPN S
5	201530Z	16.5N 130.3E	VW1-R-15	10000ft	--	--	--	---	--/--	CNTR DIFFUSED, OPEN S
6	202203Z	16.8N 129.4E	54-V-5	30000ft	35	30	--	---	--/--	CIRC 20 MI DIA, WALL CLD 5 MI THICK OPEN S
7	202210Z	17.0N 129.4E	56-P-1	688mb	40	40	993	3030	15/12	EYE NOT DEFINED, ESTIMATED 40 MI DIA, NO RDR EYE
8	210314Z	18.0N 128.0E	TIROS	--	--	--	--	---	--/--	S & E PORTIONS ONLY VSBL
9	210345Z	17.1N 129.1E	56-P-1	682mb	45	65	991	3033	14/12	CIRC 40 MI DIA OPEN S, NO RDR EYE
10	210400Z	17.0N 129.0E	54-R-3	30000ft	20	30	--	---	--/--	OVAL 20 X 25 MI E-W
11	211030Z	16.7N 128.2E	VW1-P-5	1000ft	--	50	995	---	--/--	CIRC 30 MI DIA, NEG WALL CLD, OPEN SE QUAD
12	211545Z	16.8N 127.7E	VW1-P-10	10000ft	--	--	--	3085	14/07	CNTR 40 MI DIA
13	212219Z	16.1N 126.8E	56-P-10	700mb	30	40	1001	3100	15/15	NO ORGANIZED EYE, TEMP & WND CNTRS FIXED

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
14	220300Z	16.0N 125.8E	56-P-1	700mb	30	45	998	3088	16/14	EYE FILLED IN, NO WALL CLD, NO RADAR EYE
15	221030Z	15.1N 126.5E	VW1-P-15	10000ft	--	35	--	3117	11/05	NEG CLD FORMATION, PRES CNTR FIXED
16	230000Z	14.6N 123.4E	56-P-1	700mb	30	30	997	3094	14/06	CIRC, SFC CALM AREA 15 MI DIA, NO WALL CLD

TYPHOON PATSY 19 JAN-22 JAN 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
191200Z	14.0N	128.6E	------	------
191800Z	14.4N	128.8E	------	------
200000Z	14.8N	129.1E	------	------
200600Z	15.4N	129.2E	------	------
201200Z	15.9N	129.4E	270-64	------
201800Z	16.5N	129.6E	283-45	------
210000Z	16.9N	129.3E	020-23	------
210600Z	17.0N	128.8E	085-172	------
211200Z	16.8N	128.1E	045-172	042-155
211800Z	16.6N	127.3E	067-395	046-234
220000Z	16.2N	126.3E	046-335	046-450
220600Z	15.7N	125.3E	058-260	067-610
221200Z	15.3N	124.6E	070-330	053-684
221800Z	15.0N	124.0E	074-332	062-935

AVERAGE 24 HOUR ERROR 213 MI
AVERAGE 48 HOUR ERROR 511 MI


TYPHOON PATSY
19 – 23 JANUARY 1965
24HR FORECAST POSITS
LEGEND
24HR FORECAST POSITS
6HR BEST TRACK POSITS
22/00Z
21/00Z
23/00Z
23/06Z
20/00Z
19/12Z
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
KUSAIE
FUMATAHACHI

TYPHOON WANDA - 120000Z TO 141200Z APRIL

I. DATA

A. Statistics

1. Number of warnings issued - 10
2. Number of warnings with typhoon intensity - 2
3. Total distance traveled during tropical warning period - 914 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 998mbs at 120500Z
2. Minimum observed 700mb height - 3106m. at 122300Z
3. Maximum surface wind - 65 kts (From Best Track)
4. Maximum radius of surface circulation - 250 mi

II. DEVELOPMENT

A. Initial impetus - Southern hemispheric inflow at low and mid levels under mass divergence at 200 mbs

B. Initial surface vortex

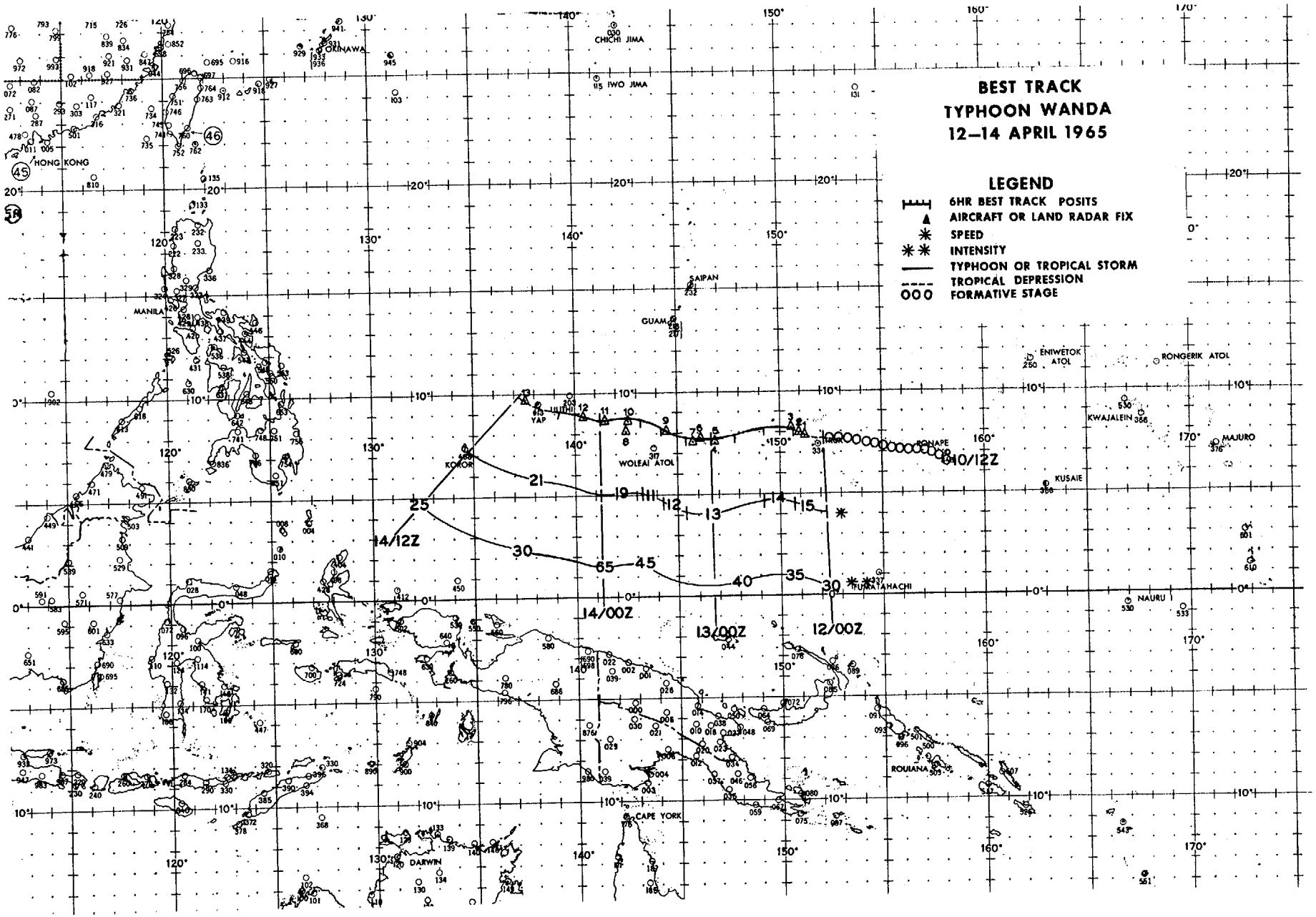
1. Junction vortex at 101200Z
2. Surface pressure less than 1010 mbs

C. 200mb flow above surface vortex

1. Initial - east
2. Upon reaching typhoon intensity - southeast

III. FINAL DISPOSITION

A. Moved under mid level anticyclonic flow


BEST TRACK
TYPHOON WANDA
12–14 APRIL 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIPAN
GUAM
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
KUSAIE
YAP
ULITHI
KOROR
WOLEAI ATOL
PONAPE
FUMATAHACHI
NAURU
ROUIANA
CAPE YORK
DARWIN
14/12Z
14/00Z
13/00Z
12/00Z
10/12Z

EYE FIXES TYPHOON WANDA

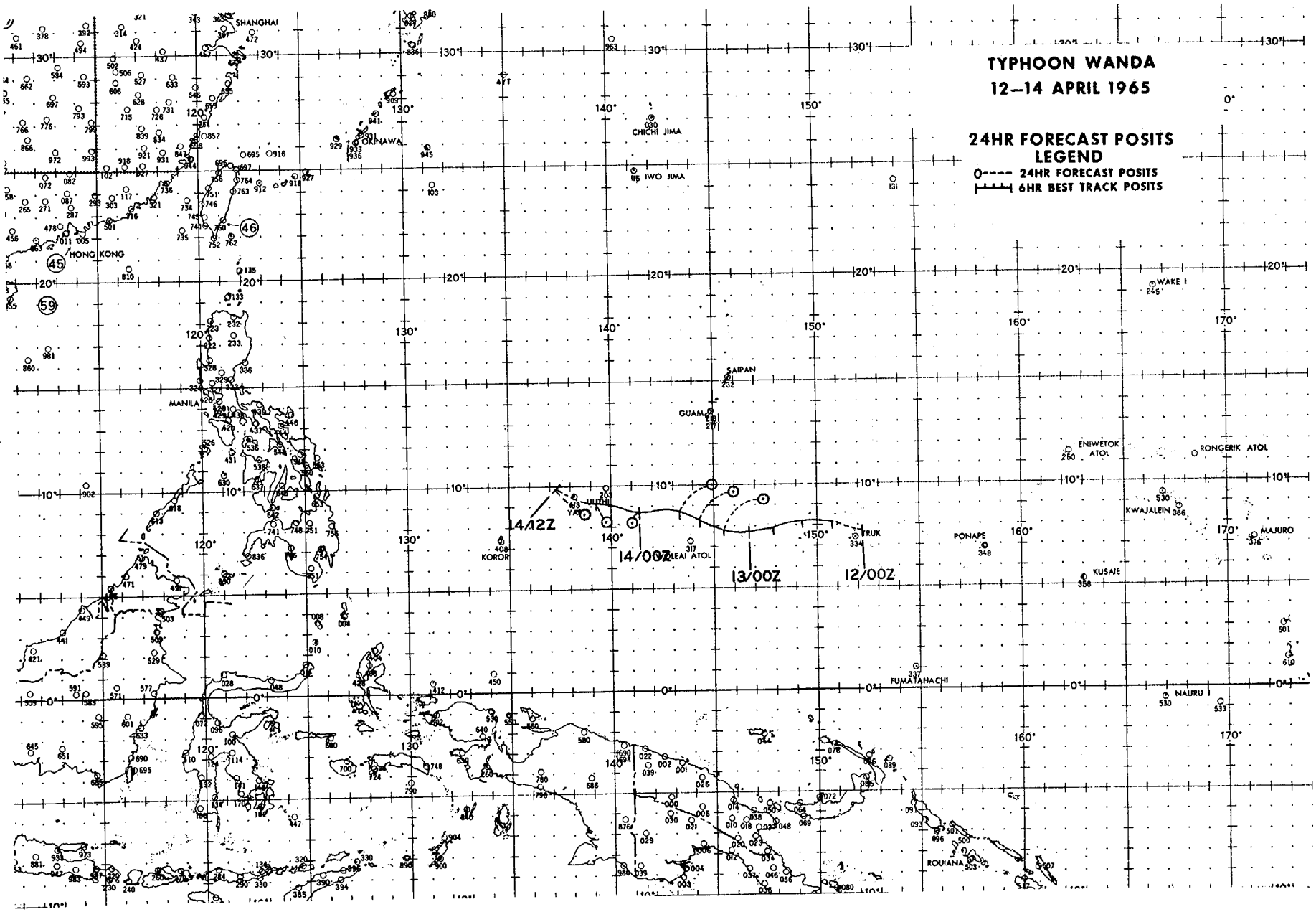
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	120316Z	07.8N 151.3E	54-R-3	29700ft	40	25	--	---	--/--	POORLY DEFINED
2	120430Z	07.9N 151.1E	54-R-3	29600ft	45	--	--	---	--/--	CNTR NOT WELL ORGANIZED NO WALL CLD
3	120500Z	08.1N 150.6E	VW1-P-10	1500ft	--	35	998	---	--/--	CNTR NOT CLSD
4	122300Z	07.6N 146.9E	56-P-1	691mb	25	35	1003	3106	15/08	EYE ELLIP NE-SW CLSD SFC AND 700MB CNTRS
5	122339Z	07.7N 146.9E	54-P-5	30000ft	--	45	--	---	-32/--	NO WALL CLD
6	130332Z	07.8N 146.1E	54-R-0	30000ft	--	40	--	---	-32/--	TWO WEAK FDR BNDS FM NW & ONE HVY FDR BND FM W INTO EYE
7	130400Z	07.7N 145.8E	56-P-1	689mb	30	35	1003	---	--/--	SFC CIRC CLSD BUT 700MB CIRCN NOT CLSD
8	130952Z	08.1N 143.6E	VW1-P-10	1500ft	--	40	1000	---	23/22	CNTR DIFUS, OPEN N SEMI. HVY WX W FDR BNDS ALL QUADS
*9	131130Z	08.3N 144.4E	VW1-P-5	1500ft	--	--	1000	---	23/21	CNTR CLOSING NEWLY FORMED FDR BNDS E QUAD
10	131545Z	08.6N 143.7E	VW1-R-10	1500ft	--	--	--	---	--/--	CNTR DIFUS FDR BNDS WKNG
11	132300Z	08.6N 141.4E	56-P-2	694mb	35	65	--	3152	09/09	SFC CNTR OPEN S HALF
12	140300Z	08.8N 140.4E	56-P-2	694mb	25	50	1006	3133	11/07	AT 700MB S HALF OPEN CALM AT LEAST 100 MI S
13	141030Z	09.7N 137.7E	VW1-P-15	1200ft	35	--	1006	---	--/--	NEG WALL CLD MOD TO HVY BRKN ECHOES NW QUAD, OTHER QUADS OPEN

*RELOCATED CENTER

TYPHOON WANDA 12 APR-14 APR 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
120000Z	07.6N	152.1E	------	------
120600Z	08.1N	150.6E	------	------
121200Z	08.2N	149.2E	------	------
121800Z	07.8N	147.9E	------	------
130000Z	07.7N	146.7E	------	------
130600Z	07.8N	145.4E	054-140	------
131200Z	08.3N	144.3E	052-120	------
131800Z	08.6N	143.3E	051-130	------
140000Z	08.6N	141.3E	208-35	------
140600Z	09.1N	139.3E	147-65	072-270
141200Z	09.8N	137.3E	135-105	078-290

AVERAGE 24 HOUR ERROR 99 MI
AVERAGE 48 HOUR ERROR 280 MI


TYPHOON WANDA
12–14 APRIL 1965
24HR FORECAST POSITS
LEGEND
24HR FORECAST POSITS
6HR BEST TRACK POSITS
SHANGHAI
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIPAN
GUAM
WAKE I
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
PONAPE
KUSAIE
TRUK
KOROR
ULITHI
YAP
LEAI ATOL
FUMATAHACHI
NAURU I
ROUIANA
14/12Z
14/00Z
13/00Z
12/00Z

TYPHOON AMY - 210600Z TO 270600Z MAY

I. DATA

A. Statistics

1. Number of warnings issued - 25
2. Number of warnings with typhoon intensity - 10
3. Total distance traveled during tropical warning period - 2250 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 976mbs at 260900Z
2. Minimum observed 700mb height - 2923m. at 260900Z
3. Maximum surface wind - 100 kts (From Best Track)
4. Maximum radius of surface circulation - 275 mi

II. DEVELOPMENT

A. Initial impetus - Southern hemispheric inflow at low and mid levels

B. Initial surface vortex

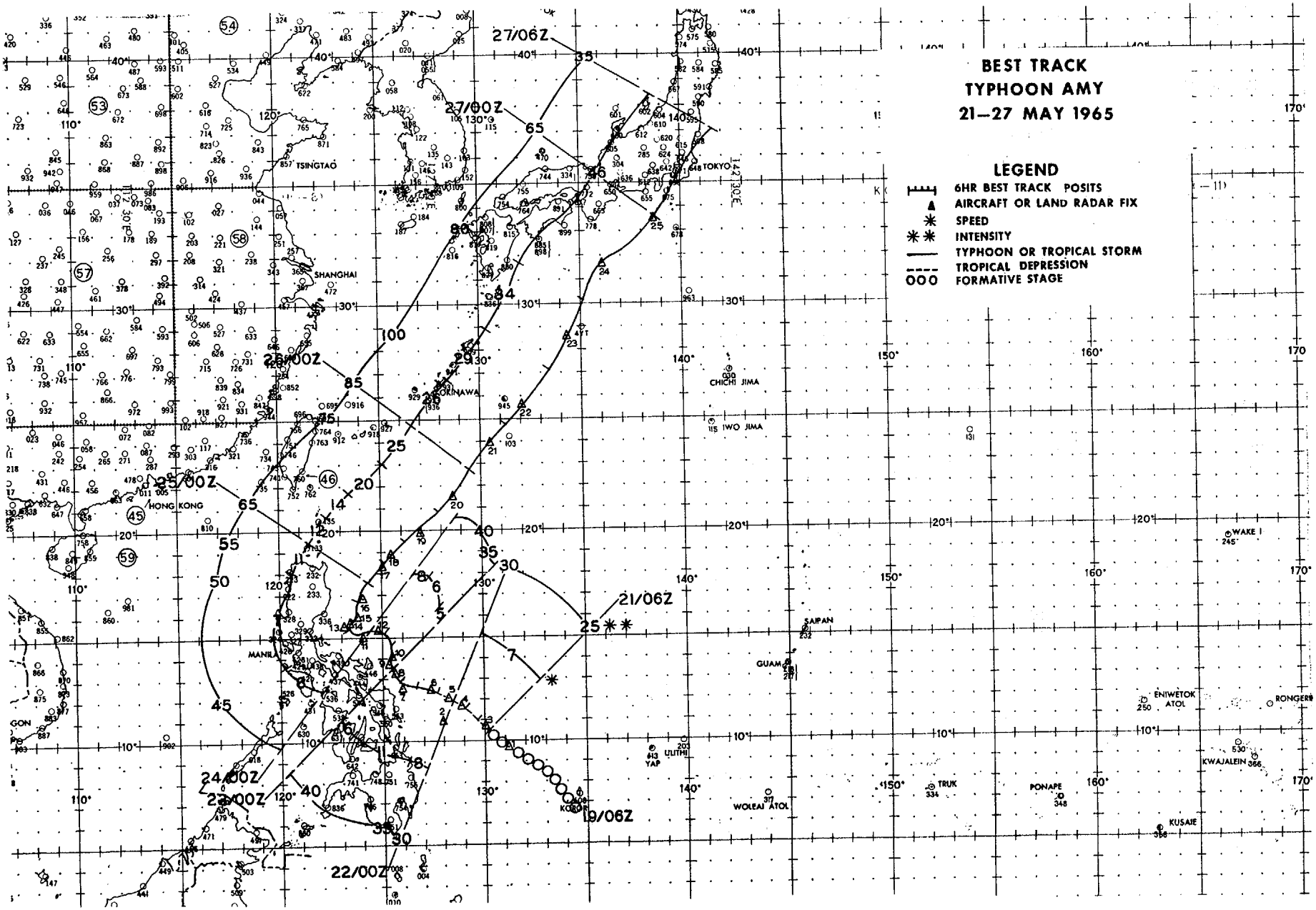
1. Junction vortex at 190600Z
2. Surface pressure less than 1006mbs

C. 200mb flow above surface vortex

1. Initial - southwestern
2. Upon reaching typhoon intensity - center of anticyclone

III. FINAL DISPOSITION

A. Became extratropical


BEST TRACK
TYPHOON AMY
21–27 MAY 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
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
KUSAIE
KWAJALEIN
ENIWETOK ATOL
WAKE I
27/06Z
27/00Z
26/00Z
25/00Z
24/00Z
23/00Z
22/00Z
21/06Z
19/06Z

EYE FIXES TYPHOON AMY

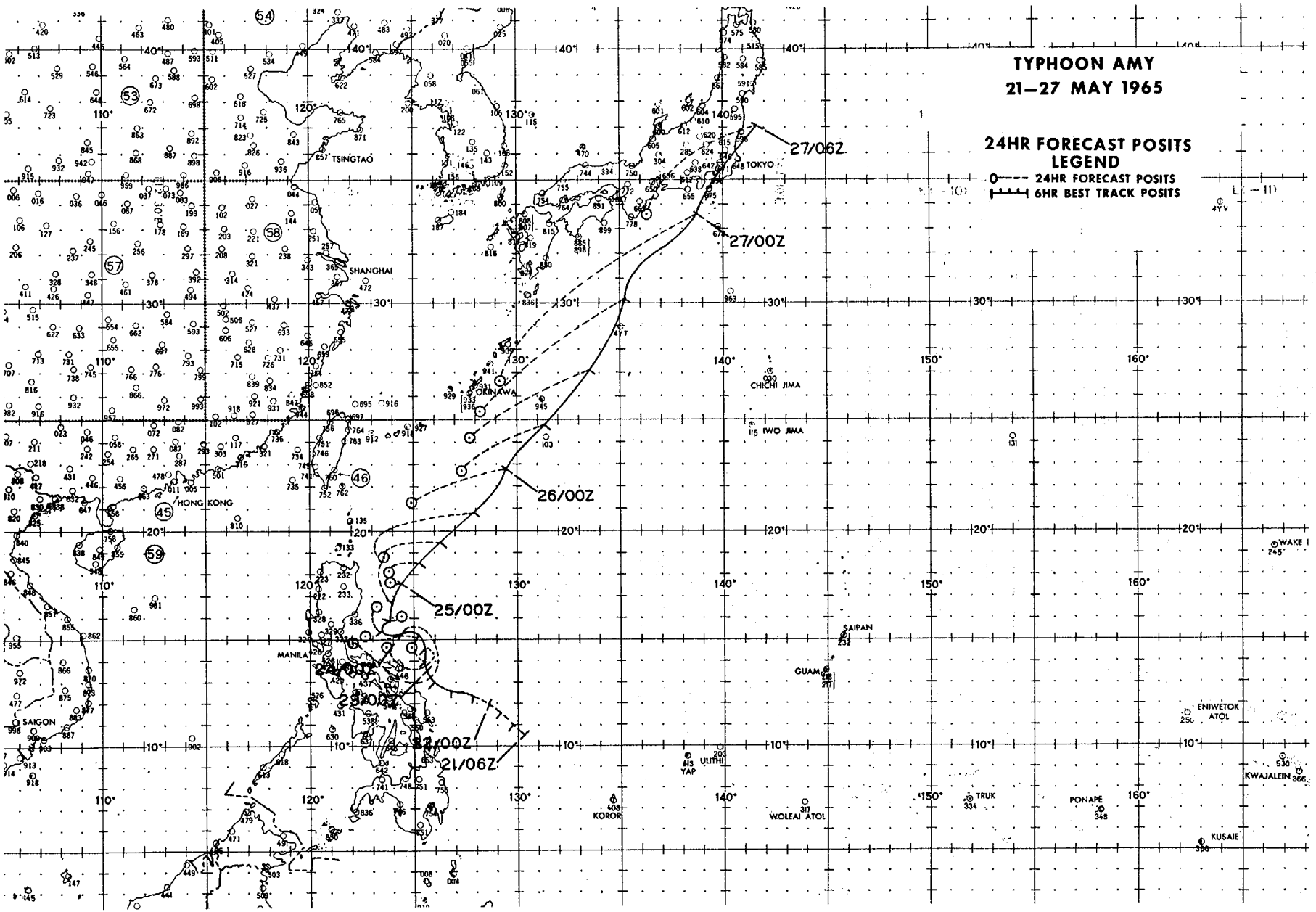
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	210135Z	09.6N 131.2E	54-R-5	30000ft	30	30	--	---	-30/--	
2	210216Z	11.0N 128.0E	TIROS	--	--	--	--	---	--/--	STAGE D, DIA 4, BNDS 1 OVC AREA 4 DEG DIA
3	210715Z	10.6N 130.1E	VW1-P-10	600ft	--	25	996	---	27/20	CNTR POORLY DEFINED 50 MI DIA OPEN NW & SE NO WALL CLD
4	212100Z	11.7N 128.9E	VW1-P-6	1500ft	--	25	995	---	24/19	CNTR CIRC 25 MI DIA PRES, WND, RADAR CNTRS CORRESPOND
5	220330Z	12.0N 128.3E	56-P-5	700mb	--	30	--	---	--/--	CLSD CIRC AT SFC ONLY NO CLSD CIRC AT 700MB
6	220800Z	12.4N 127.6E	56-P-4	700mb	20	35	1001	3045	11/03	CLSD CIRC AT SFC & 700MB WALL CLD TOPS 11000 FT
7	221440Z	12.5N 126.0E	VW1-R-U	700mb	--	--	--	---	14/08	BRKN WALLED CNTR ON RDR
8	222130Z	13.2N 125.7E	VW1-P-10	1000ft	--	25	998	---	26/22	ELIP 15X 5 MI NE-SW NEG BNDG RAPID DSPTN ALL QUADS
9	230329Z	13.7N 125.3E	56-P-2	692mb	20	25	995	3051	13/10	NO RDR EYE 700MB OPEN S, SFC CIRC CLSD
10	230800Z	14.0N 125.4E	56-P-2	692mb	30	30	993	3039	14/09	NO RDR EYE SFC CALM 30 MI DIA
11	231445Z	15.0N 124.1E	VW1-R-10	700mb	--	--	--	---	--/--	CNTR ELIP 40 X 20 MI N-S MAX TOPS OVER 35000FT

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
12	232130Z	15.2N 124.8E	VW1-P-5	800ft	--	40	993	---	28/19	CNTR CIRC 30 MI DIA
13	240345Z	15.4N 123.2E	56-E-U	3260M	--	--	--	---	--/--	APPROX CNTR UNABLE TO MAKE FIX DUE NUMEROUS FUNNEL CLDS
14	240840Z	15.8N 123.5E	56-R-5	3250M	45	45	--	---	--/--	EYE CIRC 10 MI DIA STG SPIRAL BNDS W & N QUADS
15	241521Z	16.0N 123.9E	VW1-R-10	3500ft	--	--	--	---	--/--	EYE CIRC 9 MI DIA PATTERN SUGGESTS WNDS IN EXCESS OF 65 KTS AT 3500 FT
16	242100Z	16.9N 124.1E	VW1-P-5	700ft	--	65	979	---	24/15	RDR CNTR 230 DEG 5 MI FM WND CNTR. CNTR OPEN NW QUAD
17	250450Z	18.3N 125.1E	56-P-3	700mb	60	55	982	2951	11/10	EYE CIRC 25 MI DIA
18	250900Z	18.9N 125.6E	56-P-2	700mb	65	65	982	2947	16/11	EYE CIRC 15 MI DIA LGT RAIN IN EYE
19	251500Z	19.9N 127.0E	VW1-R-10	7000ft	--	--	--	---	--/--	INTENSE EYE CIRC 20 MI DIA
20	252100Z	21.5N 128.7E	VW1-R-10	8000ft	--	--	--	---	--/--	EYE CIRC 17 MI DIA
21	260400Z	24.0N 130.5E	56-P-1	700mb	70	100	979	2944	12/10	RDR & 700MB CNTRS 10 MI E OF SFC CNTR
22	260900Z	25.7N 132.1E	56-P-1	700mb	70	100	976	2923	16/09	EYE CIRC 20 MI DIA
23	261515Z	28.6N 134.3E	VW1-R-20	7000ft	--	--	--	---	--/--	NEG RDR EYE ALL ECHOES VERY WK AND DSPTG
24	262050Z	31.6N 136.1E	VW1-P-10	1300ft	--	65	982	---	23/15	NEG WALL CLD MOST CLDS STRATIFIED
25	270000Z	33.5N 138.7E	LND RDR	--	--	--	--	---	--/--	JAPANESE LND RDR REPORT

TYPHOON AMY 21 MAY-27 MAY 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
210600Z	10.5N	130.3E	------	------
211200Z	11.0N	129.8E	------	------
211800Z	11.5N	129.2E	------	------
220000Z	11.9N	128.6E	------	------
220600Z	12.3N	127.9E	------	------
221200Z	12.5N	126.8E	------	------
221800Z	12.9N	125.8E	------	------
230000Z	13.5N	125.5E	------	------
230600Z	13.9N	125.4E	329-50	------
231200Z	14.5N	125.4E	276-103	------
231800Z	15.1N	125.1E	272-138	------
240000Z	15.2N	124.3E	264-130	------
240600Z	15.3N	123.4E	350-77	286-164
241200Z	15.9N	123.8E	077-45	271-252
241800Z	16.6N	123.9E	349-125	265-328
250000Z	17.6N	124.5E	279-33	272-270
250600Z	18.5N	125.2E	254-82	292-177
251200Z	19.5N	126.3E	258-154	234-150
251800Z	20.8N	127.9E	247-266	285-262
260000Z	22.8N	129.6E	252-273	252-370
260600Z	24.8N	131.3E	240-258	245-491
261200Z	27.2N	133.4E	240-350	243-587
261800Z	30.2N	135.1E	232-467	233-738
270000Z	33.5N	138.7E	231-653	233-750
270600Z	37.3N	141.8E	230-362	228-875

AVERAGE 24 HOUR ERROR 210 MI
AVERAGE 48 HOUR ERROR 417 MI


TYPHOON AMY
21–27 MAY 1965
24HR FORECAST POSITS
LEGEND
24HR FORECAST POSITS
6HR BEST TRACK POSITS
27/06Z
27/00Z
26/00Z
25/00Z
24/00Z
23/00Z
22/00Z
21/06Z
TSINGTAO
SHANGHAI
TOKYO
ORINOKA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
WAKE I
ENIWETOK ATOL
KWAJALEIN
KUSAIE
PONAPE
TRUK
WOLEAI ATOL
ULITHI
YAP
KOROR

TYPHOON BABE - 301800Z MAY TO 041800Z JUNE

I. DATA

A. Statistics

1. Number of warnings issued - 21
2. Number of warnings with typhoon intensity - 12
3. Total distance traveled during tropical warning period - 576 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 985mbs at 022045Z
2. Minimum observed 700mb height - 3011m. at 020900Z
3. Maximum surface wind - 80 kts (From Best Track)
4. Maximum radius of surface circulation - 275 mi

II. DEVELOPMENT

A. Initial impetus - Formed in shear between mid level westerly flow to south and northeasterly to north under leading edge of intensifying anticyclone at 200mb

B. Initial surface vortex

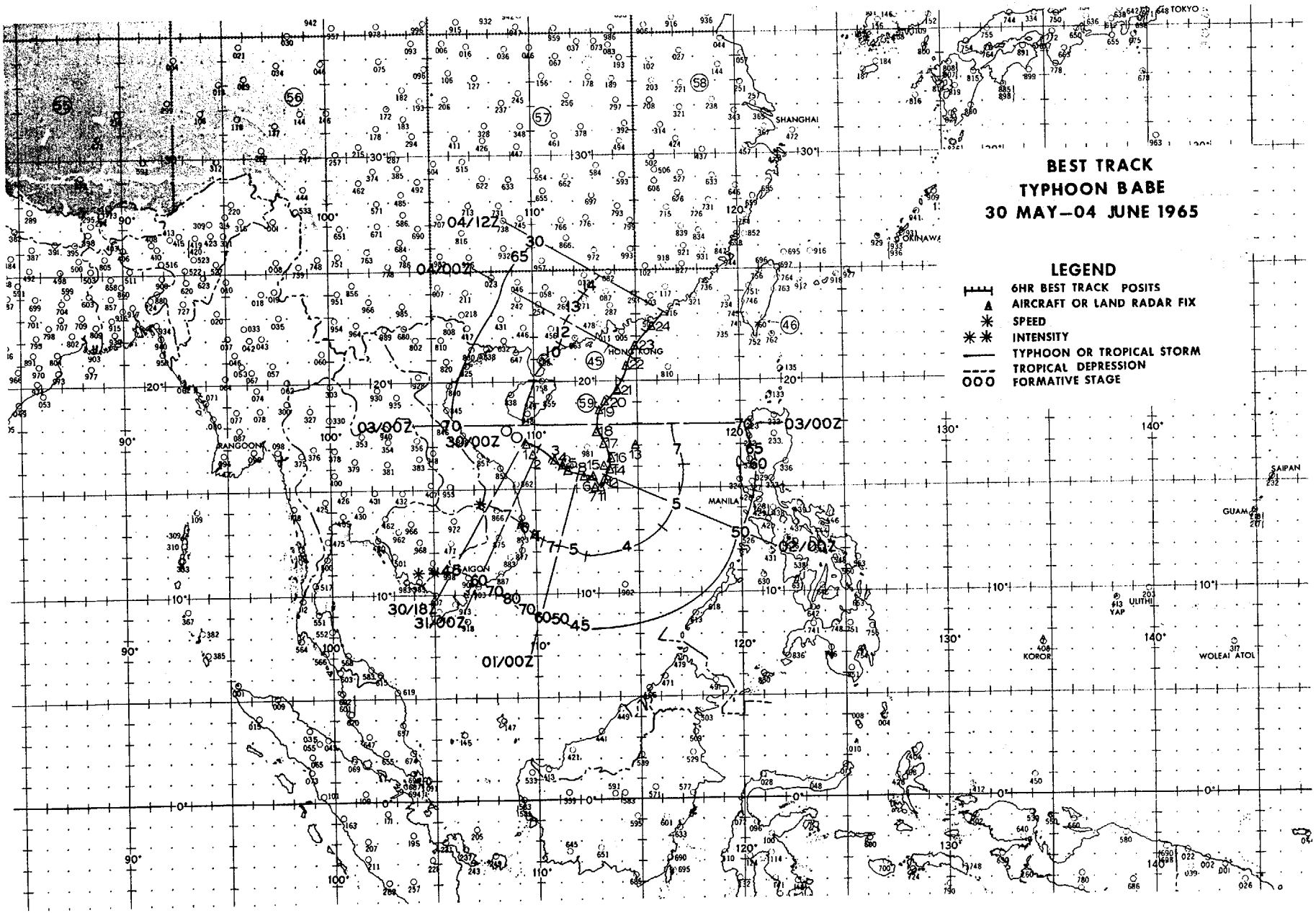
1. Junction vortex at 300000Z
2. Surface pressure less than 1004mbs

C. 200mb flow above surface vortex

1. Initial - northwest
2. Upon reaching typhoon intensity - northeast

III. FINAL DISPOSITION

A. Dissipated over land


BEST TRACK
TYPHOON BABE
30 MAY—04 JUNE 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
TOKYO
SHANGHAI
OKINAWA
HONG KONG
RANGOON
SAIGON
MANILA
GUAM
SAIPAN
ULITHI
YAP
KOROR
WOLEAI ATOL
04/12Z
04/00Z
03/00Z
30/00Z
30/18Z
31/00Z
01/00Z
02/00Z

EYE FIXES TYPHOON BABE

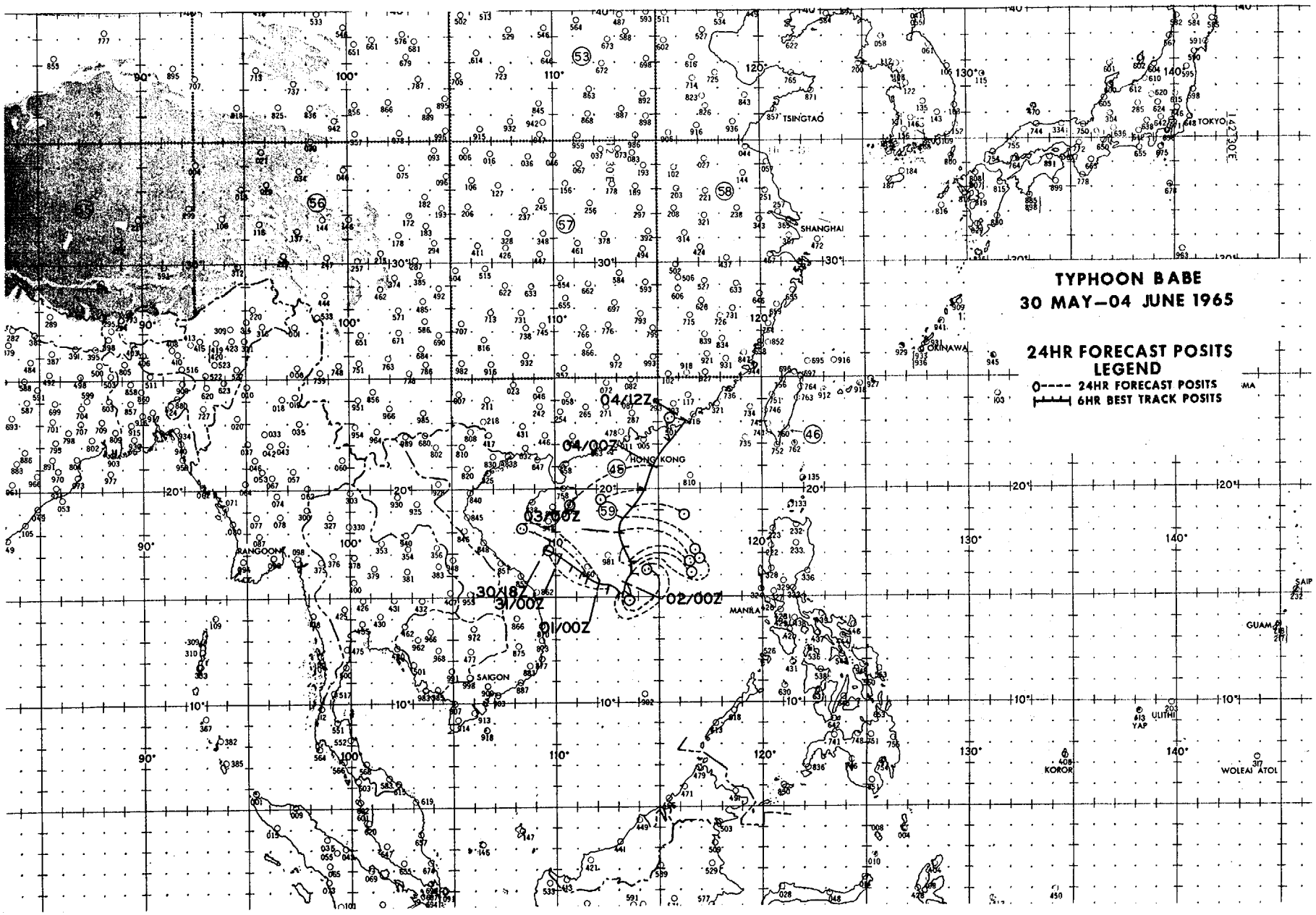
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	301830Z	17.1N 109.7E	VW1-E-U	2200ft	--	--	--	---	--/--	REPORTED AS POSSIBLE CNTR
2	302330Z	16.6N 110.0E	VW1-E-U	1500ft	--	60	--	---	--/--	
3	310845Z	16.3N 111.1E	VW1-P-P5	1200ft	--	80	991	---	29/24	
4	311445Z	16.1N 111.4E	VW1-P-P5	2000ft	--	--	998	---	24/19	EYE ELIP 18 X 8 WSW-ENE
5	312200Z	15.8N 111.7E	VW1-P-3	1500ft	--	--	--	---	--/--	
6	010324Z	15.4N 112.9E	54-R-5	35000ft	--	--	--	---	--/--	EYE CIRC 20 MI DIA
7	010411Z	15.0N 113.0E	TIROS	--	--	--	--	---	--/--	BABE ON EDGE OF PICTURES
8	010540Z	15.4N 112.6E	56-P-2	695mb	25	50	1000	3112	11/09	EYE CIRC 40 MI DIA DEF CLSD SFC CIRCN, SEVERAL CLSD CNTRS AT 700MB
9	010800Z	15.3N 112.5E	USS MID-WAY RDR	--	--	--	--	---	--/--	EYE 20 MI DIA
10	010845Z	15.4N 113.0E	56-P-2	691mb	40	45	1000	3097	10/09	EYE CIRC 40 MI DIA NO SFC OR 700MB CALM; GOOD CIRCN
11	011440Z	15.0N 113.2E	VW1-P-F5	1300ft	--	--	1004	---	25/17	CNTR ILL DEFINED NO WALL CLDS
12	012150Z	15.4N 113.5E	VW1-P-5	1000ft	--	45	996	---	--/--	EYE ELIP 40 X 32 NE-SW, OPEN NE
13	020323Z	17.0N 115.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 4.5, BNDS 2
14	020400Z	15.8N 113.7E	56-R-3	700mb	--	--	--	---	--/--	EYE CIRC 10 MI DIA

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
15	020550Z	16.0N 113.5E	56-P-2	686mb	60	45	--	3075	--/--	700MB CNTR REPORTED
16	020900Z	16.3N 113.8E	56-P-2	686mb	45	65	989	3011	11/09	GOOD CIRC IN LOW CU
17	021532Z	17.0N 113.4E	VW1-P-P3	1350ft	--	--	995	---	23/19	EYE CIRC 24 MI DIA, OPEN N AND NE
18	022045Z	17.5N 113.1E	VW1-P-P3	1250ft	--	--	985	---	24/19	EYE CIRC 22 MI DIA
19	030400Z	18.6N 113.2E	56-P-10	690mb	60	70	990	3012	17/12	EYE CIRC 15 MI DIA, OPEN E AND S
20	030900Z	19.0N 113.5E	56-P-2	690mb	45	65	992	3045	15/12	EYE CIRC 15 MI DIA, TOPS 8000 FT SYSTEM APPEARS TO BE DSPTG
21	031515Z	19.5N 114.1E	VW1-P-5	1500ft	--	--	997	---	26/16	CNTR ILL DEFINED
22	032055Z	20.6N 114.7E	VW1-R-5	1500ft	--	--	--	---	--/--	CNTR POORLY DEFINED
23	040245Z	21.6N 115.0E	56-P-3	694mb	45	45	1005	3094	09/09	EYE CIRC, MULTIPLE CNTRS AT 700MB
24	040730Z	22.4N 115.8E	56-E-U	10400ft	--	65	--	---	--/--	EST POSIT FROM SFC WINDS

TYPHOON BABE 30 MAY-04 JUNE 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
301800Z	17.3N	109.6E	------	------
310000Z	16.9N	110.2E	------	------
310600Z	16.5N	110.8E	------	------
311200Z	16.2N	111.3E	------	------
311800Z	15.9N	111.6E	307-227	------
010000Z	15.5N	112.2E	303-286	------
010600Z	15.4N	112.7E	303-202	------
011200Z	15.2N	113.1E	050-95	------
011800Z	15.2N	113.4E	051-091	304-436
020000Z	15.6N	113.7E	178-44	300-460
020600Z	16.1N	113.8E	077-189	287-348
021200Z	16.7N	113.6E	093-180	078-330
021800Z	17.3N	113.2E	109-221	084-325
030000Z	18.0N	113.1E	109-225	105-238
030600Z	18.6N	113.3E	114-225	074-407
031200Z	19.2N	113.8E	098-150	081-354
031800Z	20.0N	114.4E	257-127	092-300
040000Z	21.1N	114.8E	245-257	107-324
040600Z	22.2N	115.6E	355-65	119-317
041200Z	23.2N	116.4E	277-43	117-235

AVERAGE 24 HOUR ERROR 164 MI
AVERAGE 48 HOUR ERROR 340 MI


TYPHOON BABE
30 MAY–04 JUNE 1965
24HR FORECAST POSITS LEGEND
24HR FORECAST POSITS
6HR BEST TRACK POSITS
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
HONG KONG
RANGOON
SAIGON
MANILA
GUAM
SAIP
ULITHI
YAP
KOROR
WOLEAI ATOL
04/12Z
04/00Z
03/00Z
30/18Z
31/00Z
01/00Z
02/00Z

TYPHOON CARLA - 011200Z TO 030600Z JUNE

I. DATA

A. Statistics

1. Number of warnings issued - 8
2. Number of warnings with typhoon intensity - 4
3. Total distance traveled during tropical warning period - 605 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 991 mbs at 012115Z
2. Minimum observed 700mb height - 3057m. at 010945Z
3. Maximum surface wind - 120 kts (From Best Track)
4. Maximum radius of surface circulation - 225 mi

II. DEVELOPMENT

A. Initial impetus - surge in southerly mid level inflow

B. Initial surface vortex

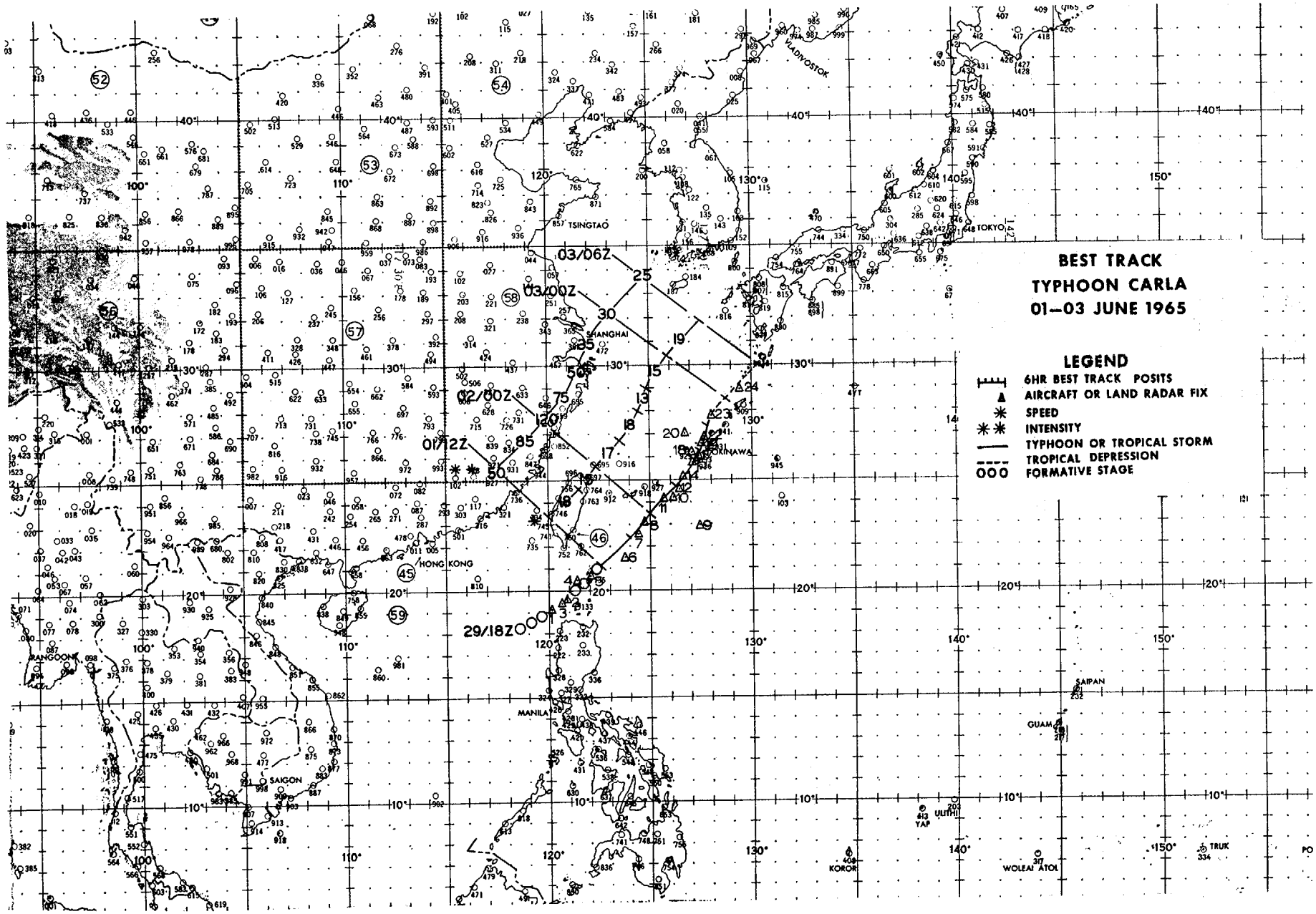
1. Junction vortex at 291800Z
2. Surface pressure less than 1004 mbs

C. 200mb flow above surface vortex

1. Initial - northwest
2. Upon reaching typhoon intensity - northwest

III. FINAL DISPOSITION

A. Became extratropical


BEST TRACK
TYPHOON CARLA
01–03 JUNE 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
03/06Z
03/00Z
02/00Z
01/12Z
29/18Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
HONG KONG
RANGOON
SAIGON
MANILA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK

EYE FIXES TYPHOON CARLA

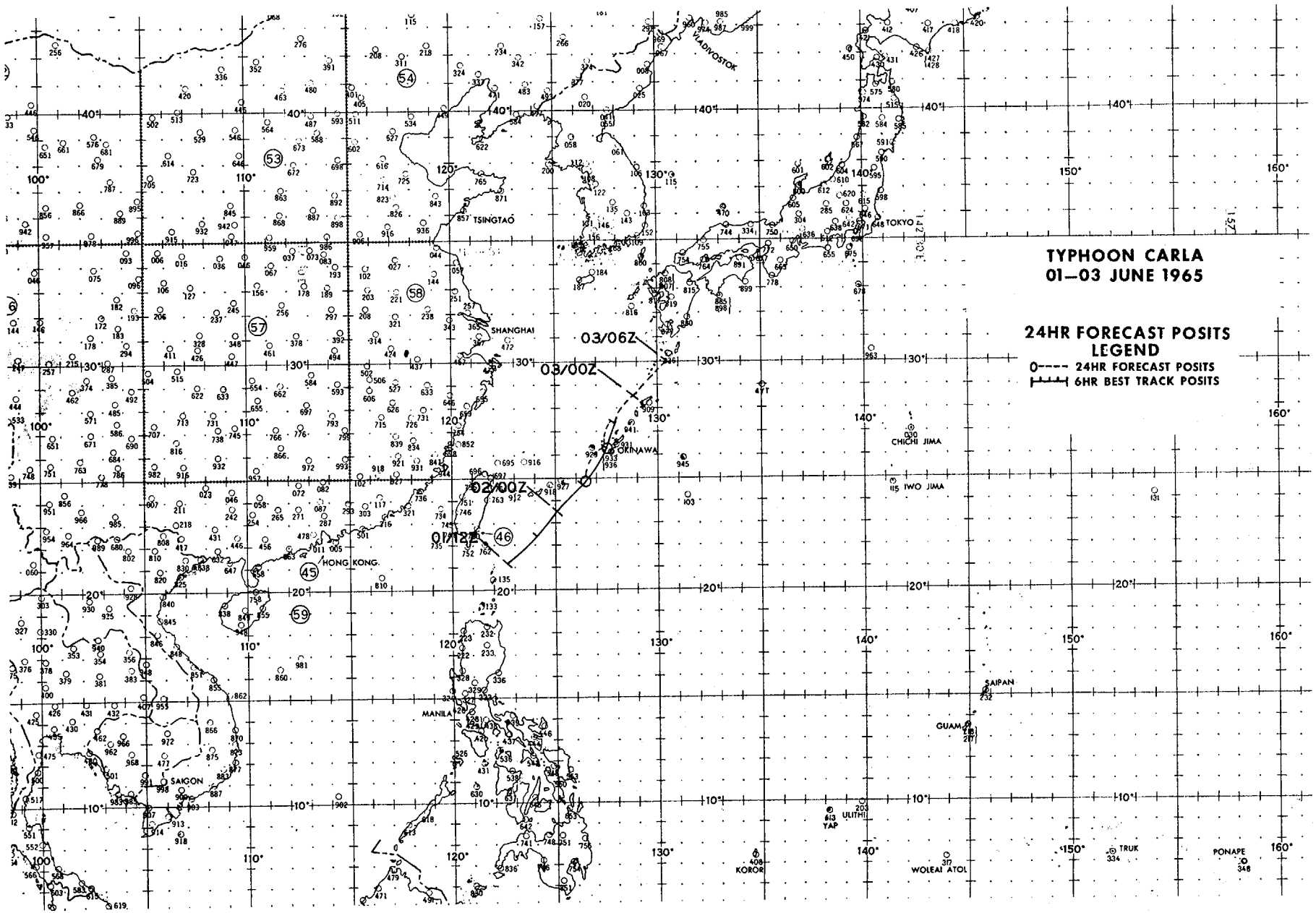
FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	312300Z	19.1N 120.2E	LND RDR	--	--	--	--	---	--/--	LAOAG RADAR REPORT
2	010230Z	19.7N 121.0E	ACFT RPT	25000ft	--	--	--	---	--/--	NAVY P3A REPORTED 35 MI DIA EYE
3	010330Z	19.5N 120.8E	LND RDR	--	--	--	--	---	--/--	LAOAG RDR REPORT
4	010645Z	20.5N 121.5E	LND RDR	--	--	--	--	---	--/--	LAOAG RDR REPORT
5	010945Z	20.7N 122.1E	56-P-1	696mb	45	50	997	3057	16/10	EYE CIRC 15 MI DIA RDR & 700MB CNTR BEARS 122 DEG 9 MI
6	011450Z	21.5N 123.9E	ACFT RPT	33000ft	--	--	--	---	--/--	CIRC RDR EYE
7	012030Z	22.7N 124.6E	LND RDR	--	--	--	--	---	--/--	EYE HAS CLSD CONSIDERABLY, 4 TO 6 MI DIA
8	012115Z	23.1N 124.8E	VW1-R-3	1500ft	--	120	991	---	23/20	EYE CIRC 10 MI DIA SOLID WALL CLD TOPS EXCEED 35000 FT
9	020225Z	23.0N 127.5E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 4, BNDS 3 NO EYE VSBL
10	020300Z	24.3N 126.3E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
11	020350Z	24.2N 125.7E	56-P-2	691mb	60	65	995	3079	16/10	SFC CNTR VERY WK. RDR EYE BEARS 070 DEG 30 MI
12	020400Z	24.6N 126.5E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
13	020430Z	24.6N 126.6E	LND RDR	--	--	--	--	---	--/--	KADENA RDR POSSIBLE EYE 18 MI DIA TOPS TO 46000 FT

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
14	020800Z	25.3N 126.7E	56-P-2	692mb	65	70	998	3066	16/10	EYE CIRC 25 MI DIA. 700MB CNTR BEARS 037 DEG 22 MI
15	020915Z	25.8N 127.2E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
16	020930Z	25.8N 127.3E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
17	021015Z	26.1N 127.4E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
18	021030Z	26.2N 127.1E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
19	021500Z	26.5N 127.6E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
20	021505Z	27.1N 126.9E	VW1-P-20	6000ft	35	--	--	---	--/--	CNTR POORLY DEFINED
21	021530Z	26.6N 127.7E	LND RDR	--	--	--	--	---	--/--	DIA 4 MI VERY WK. KADENA RDR
22	021620Z	26.8N 127.9E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
23	022050Z	27.9N 128.1E	VW1-R-10	5000ft	--	35	--	---	--/--	CNTR POORLY DEFINED. IRREGULAR SHAPE NO WALL CLD
24	030219Z	29.0N 129.5E	TIROS	--	--	--	--	---	--/--	STAGE B, DIA X, BNDS X

TYPHOON CARLA 01 JUNE-03 JUNE 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
011200Z	21.3N	122.7E	------	------
011800Z	22.4N	124.2E	------	------
020000Z	23.5N	125.1E	------	------
020600Z	24.8N	126.4E	------	------
021200Z	26.3N	127.4E	214-96	------
021800Z	27.4N	128.0E	196-78	------
030000Z	28.7N	128.9E	244-193	------
030600Z	30.1N	130.4E	062-237	------

AVERAGE 24 HOUR ERROR 151 MI


TYPHOON CARLA
01—03 JUNE 1965
24HR FORECAST POSITS
LEGEND
24HR FORECAST POSITS
6HR BEST TRACK POSITS
03/06Z
03/00Z
02/00Z
01/12Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE

TYPHOON DINAH - 100600Z TO 200000Z JUNE

I. DATA

A. Statistics

1. Number of warnings issued - 37
2. Number of warnings with typhoon intensity - 24
3. Total distance traveled during tropical warning period - 2795 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 932mbs at 170300Z
2. Minimum observed 700mb height - 2499m. at 170300Z
3. Maximum surface wind - 160 kts (From Best Track)
4. Maximum radius of surface circulation - 525 mi

II. DEVELOPMENT

A. Initial impetus - Surge in S. Hemisphere indraft

B. Initial surface vortex

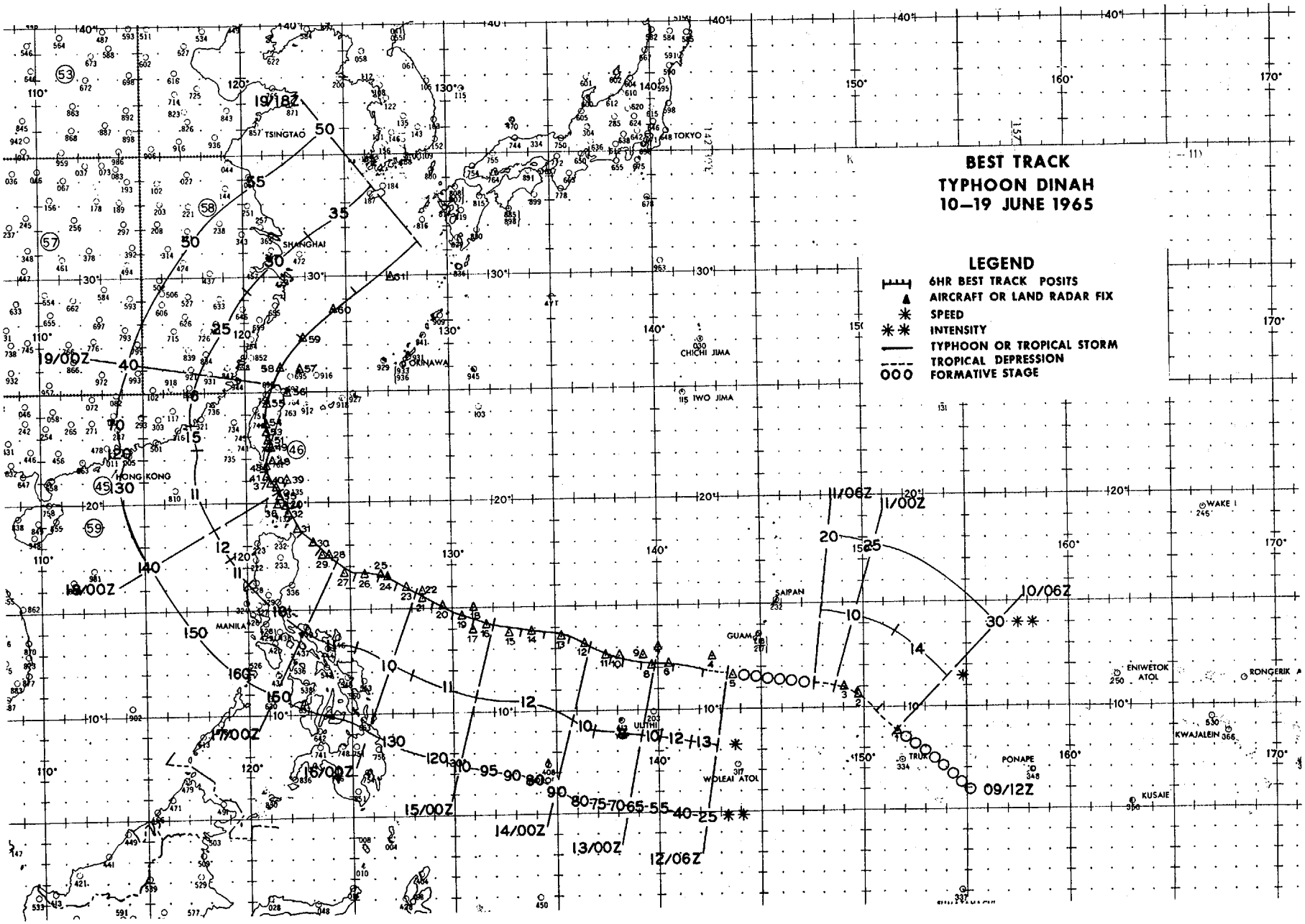
1. Junction vortex at 091200Z
2. Surface pressure less than 1009mbs

C. 200mb flow above surface vortex

1. Initial - easterly
2. Upon reaching typhoon intensity - cyclonic outdraft

III. FINAL DISPOSITION

A. Became extratropical


BEST TRACK
TYPHOON DINAH
10–19 JUNE 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
TSINGTAO
SHANGHAI
TOKYO
CHICHI JIMA
IWO JIMA
OKINAWA
HONG KONG
MANILA
SAIPAN
GUAM
ULITHI
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
KWAJALEIN
ENIWETOK ATOL
WAKE I
19/18Z
19/00Z
18/00Z
17/00Z
16/00Z
15/00Z
14/00Z
13/00Z
12/06Z
11/06Z
11/00Z
10/06Z
09/12Z

EYE FIXES TYPHOON DINAH

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	100556Z	08.9N 151.6E	54-P-UNK	700mb	31	30	1004	3085	15/U	EYE CIRC 15 MI DIA WALL CLD N & NW 12 MI THICK
2	101625Z	10.6N 149.7E	VW1-P-P5	1500ft	--	--	1003	---	22/16	SECOND CNTR AT 09.6N 150.2E MIN SLP 1004
3	110056Z	11.0N 149.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 5, BNDS 1
4	120050Z	12.5N 142.5E	TIROS	--	--	--	--	---	--/--	STAGE D, DIA 5, BNDS 1 SOME CI OUTFLOW
5	120455Z	11.6N 143.6E	VW1-P-UNK	1200ft	--	25	1004	3027	26/19	CNTR OPEN E QUAD
6	122030Z	12.2N 140.4E	56-P-P1	700mb	50	65	1002	3088	10/10	TOP OF WALL CLD 15,000 FT RDR EYE 340 DEG 4 MI FM SFC EYE
7	130037Z	13.0N 140.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 5, BNDS 2 DEF CI OUTFLOW
8	130240Z	12.1N 139.6E	56-P-P1	700mb	50	65	1001	3103	10/06	700MB EYE 240 DEG 10 MI FM SFC EYE
9	130829Z	12.6N 139.2E	VW1-P-P10	700ft	--	65	992	---	24/19	EYE CIRC 14 MI DIA OPEN TO NW
10	131445Z	12.6N 138.1E	VW1-R-P3	700mb	--	--	--	---	--/--	
11	132022Z	12.6N 137.5E	56-P-P2	700mb	30	65	993	3063	14/09	RDR EYE 7 MI NW OF SFC EYE
12	140200Z	13.2N 136.4E	56-P-P2	700mb	50	100	989	3027	20/14	RDR EYE 8 MI FM SFC EYE
13	140853Z	13.6N 135.2E	VW1-P-10	1000ft	--	80	988	---	24/19	EYE ELIP N-S 22 X 17 MI WALL CLD 5 MI THICK

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
14	141415Z	13.9N 133.8E	VW1-R-15	10000ft	--	--	--	---	--/--	EYE ELIP N-S 22 X 17 MI WALL CLD APPEARS BRKN N QUAD
15	142100Z	13.9N 132.6E	56-P-P1	700mb	65	85	--	2819	17/11	SFC CALM CNTR 5 MI DIA
16	150130Z	14.3N 131.7E	56-P-P3	700mb	75	120	--	2707	20/14	CONCENTRIC EYES OUTER 16 MI DIA INNER 8 MI DIA
17	150221Z	14.0N 131.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 5 PLUS, BNDS 3
18	150511Z	15.0N 131.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 5, BNDS 4 EYE VSBL
19	150940Z	14.7N 130.4E	VW1-R-5	1000ft	--	70	--	---	--/--	SOLID WALL CLD EYE CIRC 7 MI DIA
20	151445Z	15.1N 129.6E	VW1-R-10	10500ft	55	--	--	---	--/--	EYE ELIP N-S 20 X 15 MI
21	152120Z	15.6N 128.4E	56-P-P2	700mb	--	130	--	2707	22/17	CONCENTRIC EYES OUTER 30 MI DIA INNER 5 MI DIA
22	160212Z	15.8N 128.4E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 5, BNDS 4 EYE VSBL
23	160300Z	16.0N 127.6E	56-P-P2	700mb	--	130	--	2661	20/15	EYE CIRC 12 MI DIA
24	160900Z	16.4N 126.8E	VW1-R-10	10000ft	--	--	--	---	--/--	EYE CIRC 10 MI DIA CLSD ALL QUADS
25	161100Z	16.6N 126.5E	VW1-R-UNK	700mb	--	--	--	---	--/--	
26	161455Z	16.6N 125.6E	VW1-R-5	10000ft	--	--	--	---	--/--	EYE CIRC 12 MI DIA CLSD WALL CLD 7 MI THICK
27	162100Z	16.8N 124.7E	56-P-P3	700mb	120	130	937	2548	15/14	EYE ELIP N-S 12 X 8 MI WALL CLD SOLID

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
28	170158Z	17.5N 124.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 5, BNDS 4
29	170300Z	17.5N 123.8E	56-P-P3	700mb	120	200	932	2499	15/15	EYE CIRC 8 MI DIA WALL CLD SOLID 3 MI THICK
30	170900Z	18.1N 123.2E	VW1-R-5	8000ft	--	--	--	---	--/--	EYE DIA 15 MI
31	171445Z	18.7N 122.5E	VW1-R-5	8500ft	--	--	--	---	--/--	EYE CIRC 17 MI DIA WALL CLD BRKN NNW
32	171900Z	19.4N 122.0E	LND RDR	--	--	--	--	---	--/--	HIGH CLUB RDR
33	172025Z	19.6N 121.9E	LND RDR	--	--	--	--	---	--/--	HIGH CLUB RDR
34	172130Z	19.9N 121.8E	56-P-F1	700mb	--	150	943	2579	17/17	EYE CIRC 10 MI DIA
35	172200Z	20.3N 121.6E	LND RDR	--	--	--	--	---	--/--	HIGH CLUB RDR
36	172248Z	20.0N 121.5E	LND RDR	--	--	--	--	---	--/--	LAOAG RDR
37	180000Z	20.5N 121.5E	LND RDR	--	--	--	--	---	--/--	HIGH CLUB RDR
38	180150Z	20.8N 121.4E	LND RDR	--	--	--	--	---	--/--	HIGH CLUB RDR
39	180152Z	21.0N 122.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 5 PLUS, BNDS 3 PLUS
40	180250Z	20.9N 121.2E	56-R-P2	700mb	100+	100	--	---	--/--	ALMOST CONCENTRIC EYE FDR BNDS OUT 60 MI
41	180400Z	21.1N 121.0E	LND RDR	--	--	--	--	---	--/--	HIGH CLUB RDR
42	180417Z	21.2N 121.2E	ACFT RDR	22000ft	--	--	--	---	--/--	
43	180600Z	21.4N 121.0E	LND RDR	--	--	--	--	---	--/--	HIGH CLUB RDR

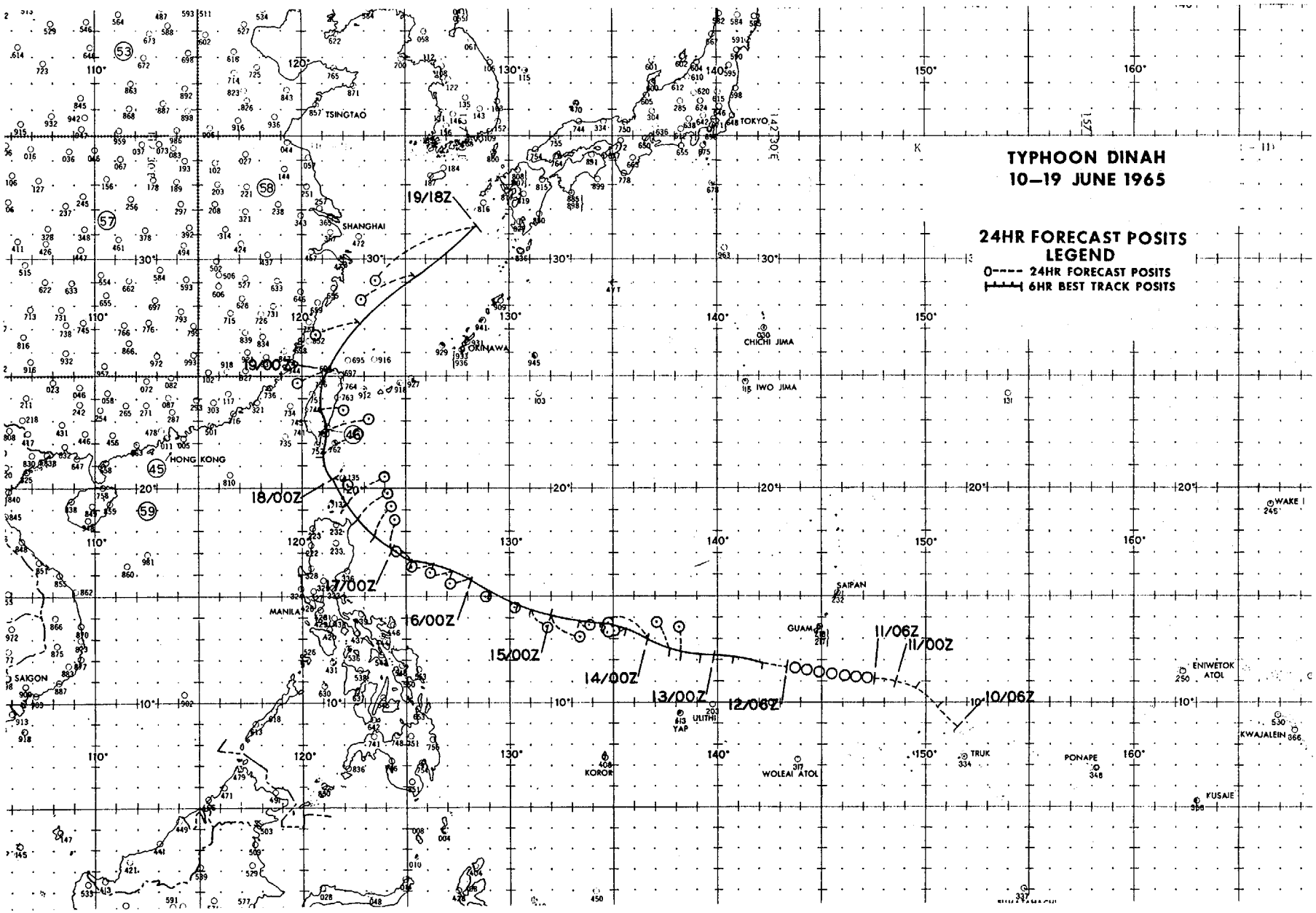
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
44	180700Z	21.5N 121.1E	LND RDR	--	--	--	--	---	--/--	HIGH CLUB RDR
45	180745Z	21.7N 121.0E	VW1-R-2	10000ft	--	--	--	---	--/--	EYE 8 MI DIA WALL CLDS ALL QUADS THICKNESS 3 MI N, 2 MI E, 3 MI S, 6 MI W
46	180800Z	21.7N 121.1E	LND RDR	--	--	--	--	---	--/--	HIGH CLUB RDR
47	180845Z	21.7N 121.0E	VW1-R-2	10000ft	40	55	--	---	--/--	EYE APPEARED STATIONARY LAST HOUR
48	181000Z	22.0N 121.2E	LND RDR	--	--	--	--	---	--/--	
49	181100Z	22.4N 121.2E	LND RDR	--	--	--	--	---	--/--	SAD POKER RDR
50	181300Z	22.5N 121.2E	LND RDR	--	--	--	--	---	--/--	SAD POKER RDR
51	181454Z	22.8N 121.1E	VW1-R-3	9000ft	--	--	--	---	--/--	EYE ELIP N-S 8 X 6 W SIDE WALL CLC OVER LND
52	181537Z	22.7N 121.1E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
53	181700Z	23.1N 121.1E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
54	181900Z	23.5N 121.0E	LND RDR	--	--	--	--	---	--/--	TAKANGSHAN & WEIPU RDRS EYE DISSIPATED
55	182200Z	24.6N 121.1E	56-P-F2	500mb	25	--	--	---	-05/-07	500MB WND CNTR REPORTED CNTR OVER LND
56	190144Z	25.0N 122.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 3, BNDS 1
57	190200Z	26.0N 122.6E	LND RDR	--	--	--	--	---	--/--	SHIHMEN RDR
58	190206Z	26.1N 121.6E	56-P-P2	700mb	40	45	1001	3075	10/09	SFC WND CNTR REPORTED CLD CNTR AT 26.1N 122.8E AT 190134Z HAD WALL CLD & EYE

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
59	190500Z	27.4N 122.8E	LND RDR	--	--	--	--	---	--/--	
60	190932Z	28.6N 124.4E	VW1-P-5	800ft	--	55	991	---	--/--	PARTIAL WALL CLD 5 MI THICK NE QUAD CNTR ELIP N-S 15 X 8 IN STRATIFORM CLDS
61	191435Z	30.0N 127.1E	VW1-P-15	1500ft	--	50	998	---	22/15	CNTR DIFFUSE

TYPHOON DINAH 10 JUNE-19 JUNE 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
100600Z	08.9N	151.5E	------	------
101200Z	09.8N	150.5E	------	------
101800Z	10.7N	149.5E	------	------
110000Z	11.0N	148.5E	------	------
110600Z	11.2N	147.5E	------	------
120600Z	11.7N	143.4E	------	------
121200Z	11.9N	142.1E	------	------
121800Z	12.2N	140.8E	------	------
130000Z	12.2N	139.9E	------	------
130600Z	12.3N	139.2E	------	------
131200Z	12.4N	138.3E	352-64	------
131800Z	12.5N	137.7E	335-75	------
140000Z	13.0N	136.7E	295-127	------
140600Z	13.5N	135.6E	269-49	------
141200Z	13.8N	134.5E	123-40	------
141800Z	13.9N	133.3E	108-41	------
150000Z	14.2N	132.0E	127-104	317-126
150600Z	14.5N	131.0E	128-67	356-67
151200Z	14.8N	130.0E	138-17	079-50
151800Z	15.3N	129.0E	186-18	068-58
160000Z	15.7N	128.1E	264-50	159-136
160600Z	16.2N	127.2E	267-62	171-120
161200Z	16.5N	126.4E	263-65	245-30
161800Z	16.6N	125.2E	307-50	326-34
170000Z	17.2N	124.3E	012-96	292-95
170600Z	17.8N	123.5E	026-104	294-105
171200Z	18.5N	122.7E	041-117	296-99
171800Z	19.3N	122.1E	056-131	347-74
180000Z	20.4N	121.5E	112-40	048-246
180600Z	21.4N	121.0E	058-120	058-266
181200Z	22.5N	121.2E	070-115	062-287
181800Z	23.7N	121.0E	103-59	070-291
190000Z	25.3N	121.3E	252-85	098-158
190600Z	27.3N	122.8E	258-119	076-195
191200Z	29.2N	125.3E	249-146	103-89
191800Z	31.4N	128.5E	243-295	214-190

AVERAGE 24 HOUR ERROR 87 MI
AVERAGE 48 HOUR ERROR 136 MI


TYPHOON DINAH
10–19 JUNE 1965
24HR FORECAST POSITS
LEGEND
0---- 24HR FORECAST POSITS
6HR BEST TRACK POSITS
19/18Z
19/00Z
18/00Z
17/00Z
16/00Z
15/00Z
14/00Z
13/00Z
12/06Z
11/06Z
11/00Z
10/06Z
TSINGTAO
SHANGHAI
ORINAWA
TOKYO
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
KWAJALEIN
ENIWETOK ATOL
WAKE I
110°
120°
130°
140°
150°
160°
30°
20°
10°

TYPHOON FREDA - 070600Z TO 160000Z JULY

I. DATA

A. Statistics

1. Number of warnings issued - 36
2. Number of warnings with typhoon intensity - 27
3. Total distance traveled during tropical warning period - 2400 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 922mbs at 122120Z
2. Minimum observed 700mb height - 2350m. at 121445Z
3. Maximum surface wind - 140 kts (From Best Track)
4. Maximum radius of surface circulation - 675 mi

II. DEVELOPMENT

A. Initial impetus - Strong outdraft at 200mb after fracture of MPT

B. Initial surface vortex

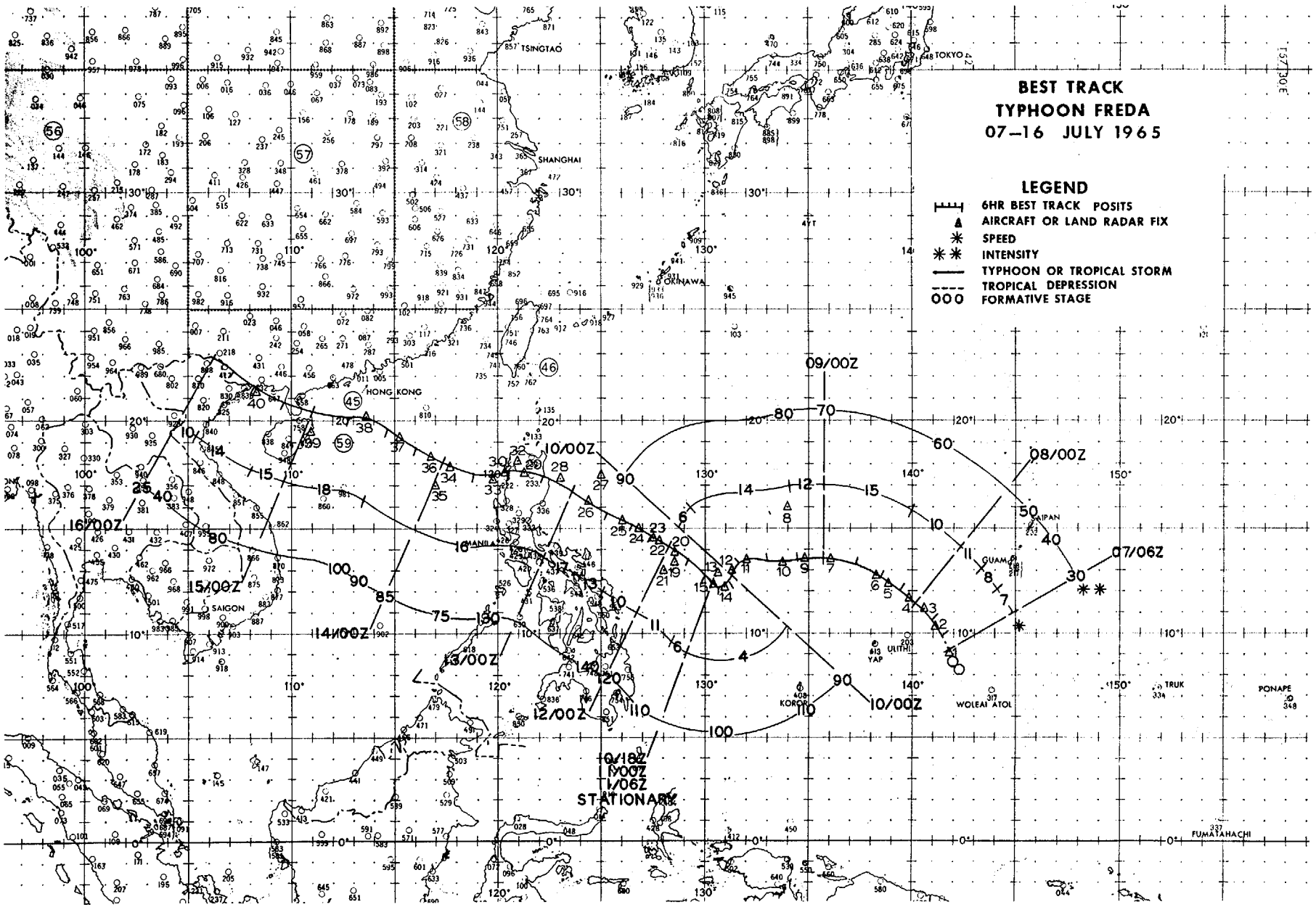
1. Junction vortex at 060000Z
2. Surface pressure less than 1009mbs

C. 200mb flow above surface vortex

1. Initial - southeast
2. Upon reaching typhoon intensity - east side of anticyclone

III. FINAL DISPOSITION

A. Dissipated over land


BEST TRACK
TYPHOON FREDA
07–16 JULY 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
TSINGTAO
TOKYO
SHANGHAI
OKINAWA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
FUMATAHACHI
09/00Z
08/00Z
07/06Z
10/00Z
16/00Z
15/00Z
14/00Z
13/00Z
12/00Z
10/18Z
11/00Z
11/06Z
STATIONARY

EYE FIXES TYPHOON FREDA

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	070500Z	09.2N 141.8E	54-P-P5	1500ft	--	30	1002	3060	23/--	EYE CIRC 20 MI DIA WELL DEFINED FDR BND N & NE
2	071500Z	10.3N 141.2E	VW1-P-P2	1100ft	45	--	997	---	26/23	EYE CIRC 11 MI DIA
3	072100Z	11.1N 140.6E	56-P-P4	700mb	32	30	996	3033	11/09	EYE NOT DEFINED
4	080200Z	11.7N 139.8E	56-P-P2	691mb	30	35	--	3030	13/09	SFC WND CENTR CIRC 10 MI DIA 700MB WIND CNTR 10 MI N OF SFC CNTR
5	080845Z	12.3N 138.9E	VW1-P-P3	957mb	35	50	987	---	25/20	EYE CIRC 22 MI DIA NUMEROUS FDR BNDS N & E
6	081430Z	12.7N 138.4E	VW1-R-F15	700mb	60	--	--	---	--/--	EYE CIRC 32 MI DIA SYSTEM VERY DIFFUSE
7	082100Z	13.4N 136.1E	56-P-P1	685mb	40	50	--	3036	15/09	EYE CIRC 8 MI DIA NO RDR EYE
8	090039Z	16.0N 134.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 5, BNDS 1 OVC TO S & SE
9	090247Z	13.5N 134.9E	56-P-P1	700mb	50	100	986	3011	17/13	EYE CIRC 8 MI DIA
10	090918Z	13.4N 133.7E	VW1-P-P3	962mb	--	65	986	---	27/22	EYE CIRC 10 MI DIA RDR EYE POORLY DEFINED EST 16 MI DIA BEARING 255/15 MI FM WND EYE
11	091500Z	13.6N 132.0E	VW1-R-F4	706mb	52	--	--	---	--/--	EYE CIRC 14 MI DIA
12	092100Z	13.0N 131.3E	56-P-P1	700mb	75	80	970	2890	22/16	EYE CIRC 22 MI DIA

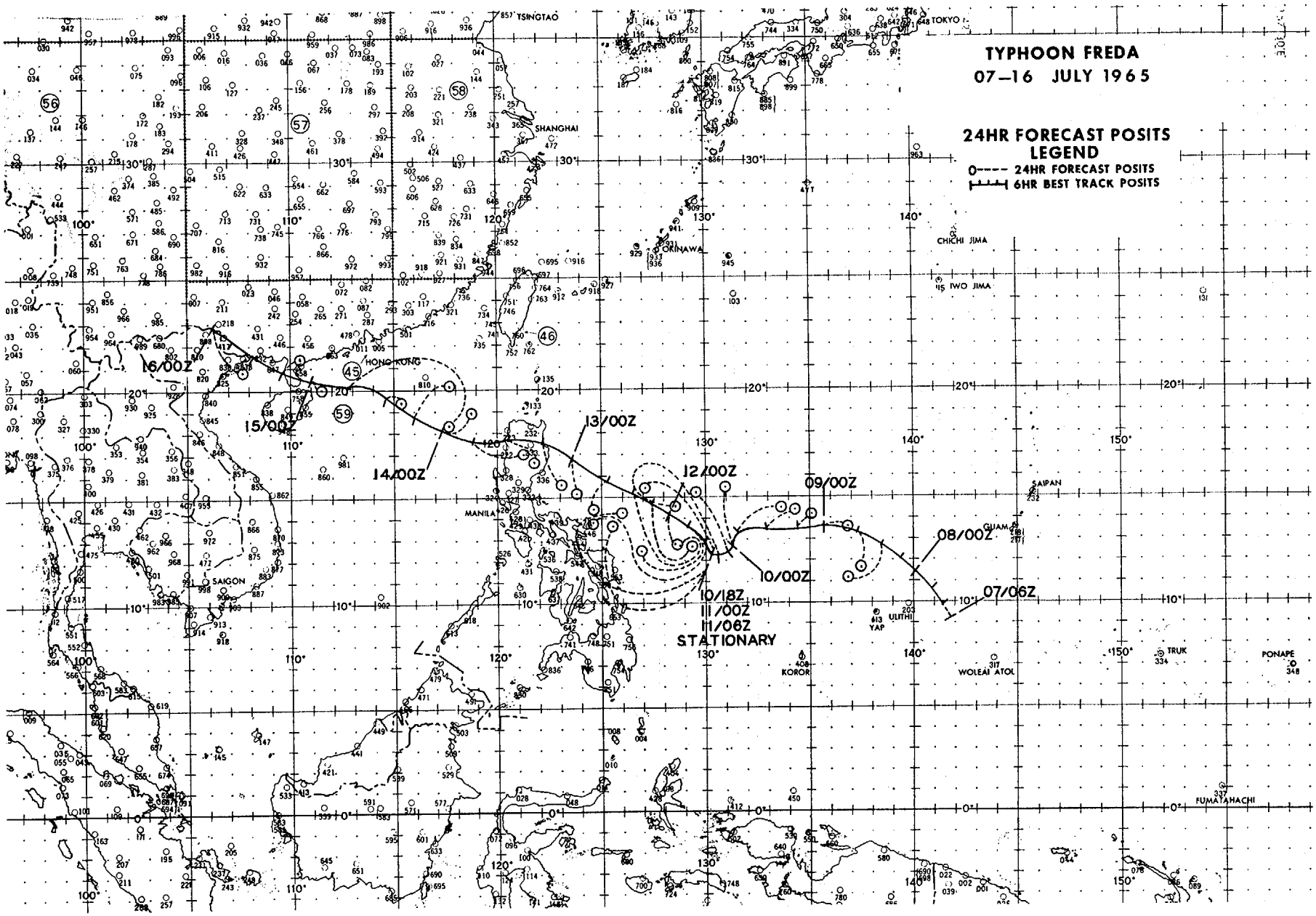
FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
13	100300Z	12.9N 130.5E	56-P-P10	700mb	80	130	968	2847	22/12	EYE CIRC 15 MI DIA
14	100903Z	12.2N 131.0E	VW1-P-P3	980ft	45	90	--	---	27/19	EYE CIRC 19 MI DIA HVY FDR BND SE QUAD 91 MI THICK
15	101445Z	12.3N 130.3E	VW1-R-P5	700mb	45	--	--	---	--/--	EYE CIRC 46 MI DIA CNTR RINGED BY FDR BNDS
16	102155Z	12.4N 130.4E	56-P-P10	700mb	70	75	966	2804	15/12	EYE CIRC 30 MI DIA PRO-BABLE SATELLITE EYE 10 MI E
17	110250Z	12.4N 130.6E	56-P-P5	700mb	70	75	961	2762	17/13	EYE CIRC 40 MI DIA RDR CNTR BEARS 310/5 MI
18	110905Z	12.4N 130.4E	VW1-P-P10	900ft	--	105	--	---	22/18	EYE CIRC 25 MI DIA RDR EYE APPEARS 10 MI ESE WND AND PRES EYE
19	111515Z	13.4N 128.6E	VW1-R-F15	700mb	--	--	--	---	--/--	EYE CIRC 25 MI DIA
20	112125Z	13.9N 128.6E	56-P-P1	700mb	90	120	940	2542	17/12	EYE CIRC 25 MI DIA SFC CALM 10 MI DIA
21	120206Z	13.0N 128.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 7, BNDS 3 PLUS
22	120300Z	14.5N 127.8E	56-P-P20	700mb	120	140	934	2432	20/14	EYE CIRC 25 MI DIA
23	120343Z	14.6N 127.6E	VW1-R-U	10,000ft	--	--	--	---	--/--	EYE OPEN NW QUAD
24	120900Z	15.0N 126.9E	VW1-R-P5	950ft	92	120	--	---	24/17	EYE ELIP 20 X 16 NE-SW
25	121445Z	15.3N 126.0E	VW1-P-P5	720mb	115	--	--	2350	18/12	EYE ELIP 18 X 14 E-W
26	122120Z	16.3N 124.4E	56-P-P4	700mb	120	100	922	2402	18/17	EYE CIRC 10 MI DIA RDR EYE INDEF

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
27	130158Z	17.5N 125.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 8 PLUS, BNDS 3 PLUS
28	130300Z	17.3N 123.0E	56-P-P1	700mb	120	150	928	2451	19/16	EYE CIRC 700MB WND CNTR 17.0N 122.9E EYE BREAKING UP
29	130845Z	17.6N 121.3E	VW1-R-F15	1200ft	--	65	--	---	--/--	EYE CIRC 15 MI DIA CNTR OVER LUZON BREAKING UP CNTR DIFFICULT TO DISCERN
30	131030Z	17.6N 120.3E	VW1-R-U	7500ft	--	--	--	---	--/--	CNTR HARD TO DEFINE
31	131120Z	17.8N 121.1E	LND RDR	--	--	--	--	---	--/--	LAOAG RDR
32	131215Z	18.1N 121.0E	LND RDR	--	--	--	--	---	--/--	PORO PT. RDR
33	131445Z	17.3N 119.8E	VW1-R-P5	UNK	--	--	--	---	--/--	EYE CIRC 30 MI DIA. STM APPEARS TO BE REORGANIZING
34	132240Z	17.9N 117.6E	56-P-F1	700mb	67	60	965	2783	14/11	EYE INDEF SFC CALM THIS POSIT
35	140147Z	17.0N 117.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 7, BNDS 3
36	140300Z	18.3N 116.8E	56-P-F3	700mb	70	55	964	2777	16/12	EYE INDEF SFC CALM THIS POSIT
37	140855Z	19.3N 115.3E	VW1-P-P3	1500ft	--	95	962	---	25/23	EYE HOOK SHAPED OPEN S-W 15 MI DIA WND EYE BEARING 135/13 MI
38	141445Z	20.2N 113.8E	VW1-R-F10	700mb	60	--	--	---	--/--	EYE HOOK SHAPED. OPEN S
39	150142Z	19.5N 111.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 6, BNDS 3
40	151500Z	21.3N 108.2E	VW1-R-L3	700mb	20	--	--	---	--/--	CNTR POSIT EST BY SPIRAL OVERLAY

TYPHOON FREDA 07 JULY-16 JULY 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
070600Z	09.3N	141.8E	------	------
071200Z	09.9N	141.4E	------	------
071800Z	10.7N	140.9E	------	------
080000Z	11.4N	140.1E	------	------
080600Z	12.1N	139.4E	------	------
081200Z	12.6N	138.5E	230-132	------
081800Z	13.2N	137.2E	170-93	------
090000Z	13.5N	135.6E	088-69	------
090600Z	13.5N	134.4E	045-50	------
091200Z	13.4N	133.0E	053-94	------
091800Z	13.3N	131.6E	057-136	099-118
100000Z	12.8N	131.3E	352-157	040-159
100600Z	12.4N	131.2E	331-190	349-204
101200Z	12.2N	130.7E	318-195	345-237
101800Z	12.3N	130.3E	311-263	341-246
110000Z	12.3N	130.3E	293-284	320-372
110600Z	12.3N	130.3E	283-300	306-412
111200Z	12.8N	130.0E	282-322	306-410
111800Z	13.6N	129.2E	243-152	305-450
120000Z	14.2N	128.3E	173-81	287-415
120600Z	14.7N	127.4E	137-175	275-390
121200Z	15.2N	126.4E	138-200	273-368
121800Z	15.8N	125.2E	205-98	222-190
130000Z	16.8N	123.7E	177-97	170-198
130600Z	17.5N	122.3E	158-120	135-368
131200Z	17.6N	120.6E	130-83	132-396
131800Z	17.5N	118.9E	104-130	155-135
140000Z	18.1N	117.3E	58-106	135-141
140600Z	18.8N	116.0E	49-124	127-227
141200Z	19.7N	114.7E	130-38	116-228
141800Z	20.1N	112.8E	112-291	112-282
150000Z	20.4N	111.0E	130-37	64-177
150600Z	20.8N	109.5E	58-59	55-213
151200Z	21.4N	108.2E	------	102-135
151800Z	22.3N	107.1E	------	113-304
160000Z	22.8N	106.2E	144-147	------

AVERAGE 24 HOUR ERROR 146 MI
AVERAGE 48 HOUR ERROR 271 MI


TYPHOON FREDA
07–16 JULY 1965
24HR FORECAST POSITS
LEGEND
0---- 24HR FORECAST POSITS
6HR BEST TRACK POSITS
16/00Z
15/00Z
14/00Z
13/00Z
12/00Z
09/00Z
08/00Z
07/06Z
10/00Z
10/18Z
11/00Z
11/06Z
STATIONARY
TSINGTAO
TOKYO
SHANGHAI
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
FUMATAHACHI

TYPHOON HARRIET - 210000Z TO 270000Z JULY

I. DATA

A. Statistics

1. Number of warnings issued - 25
2. Number of warnings with typhoon intensity - 16
3. Total distance traveled during tropical warning period - 2080 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 973mbs at 250910Z
2. Minimum observed 700mb height - 2871m. at 252235Z
3. Maximum surface wind - 100 kts (From Best Track)
4. Maximum radius of surface circulation - 750 mi

II. DEVELOPMENT

A. Initial impetus - Low level surge in the Southern Hemisphere "trades" crossing the equator

B. Initial surface vortex

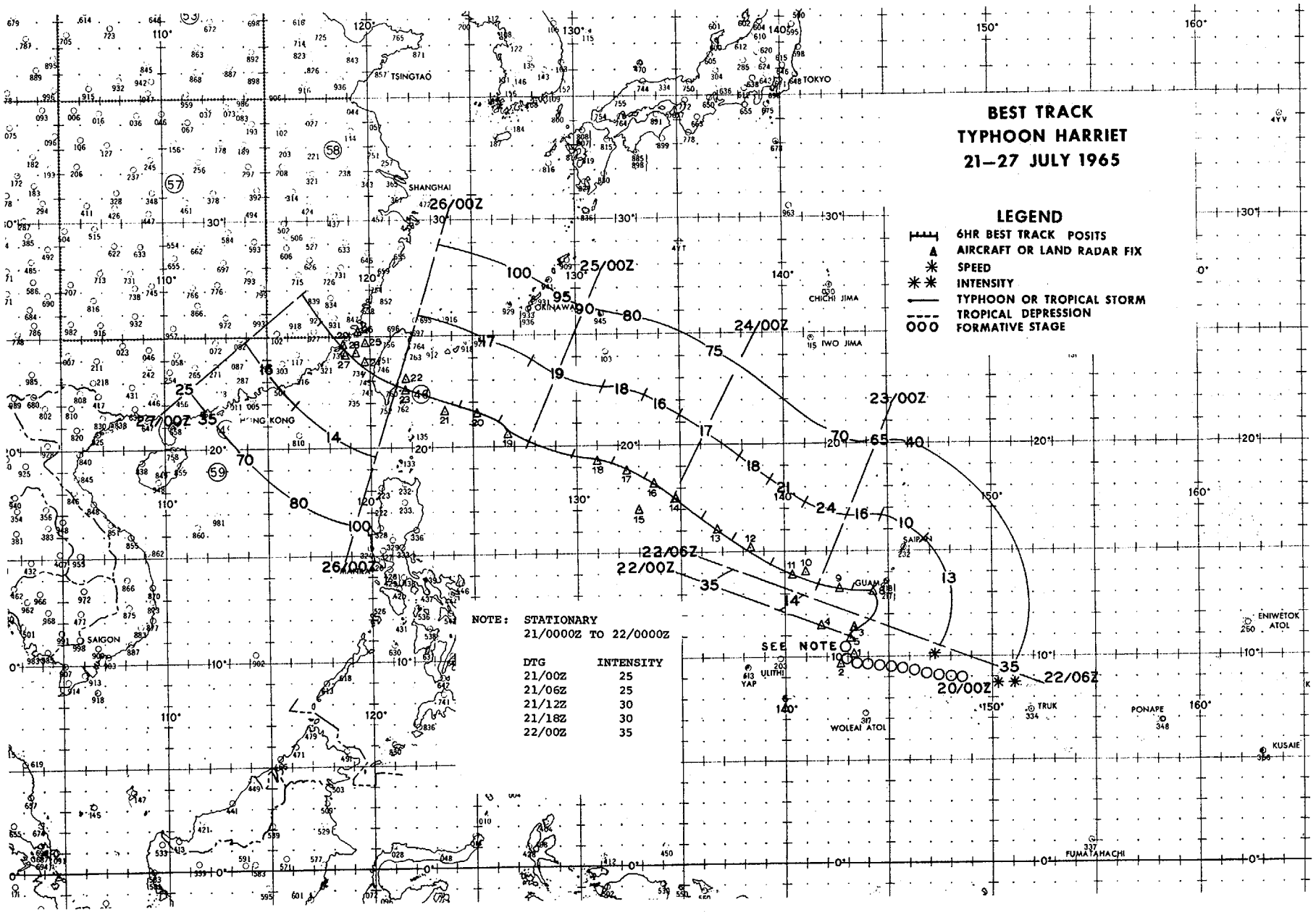
1. Junction vortex at 200000Z
2. Surface pressure less than 1007mbs

C. 200mb flow above surface vortex

1. Initial - under anticyclonic center
2. Upon reaching typhoon intensity - northeasterly flow

III. FINAL DISPOSITION

A. Dissipated over land


BEST TRACK
TYPHOON HARRIET
21–27 JULY 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
NOTE: STATIONARY
21/0000Z TO 22/0000Z
DTG INTENSITY
21/00Z 25
21/06Z 25
21/12Z 30
21/18Z 30
22/00Z 35
SEE NOTE
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
SAIGON
MANILA
SAIPAN
GUAM
ULITHI
YAP
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
KUSAIE
FUMATAHACHI
26/00Z
25/00Z
24/00Z
23/00Z
22/06Z
22/00Z
20/00Z

EYE FIXES TYPHOON HARRIET

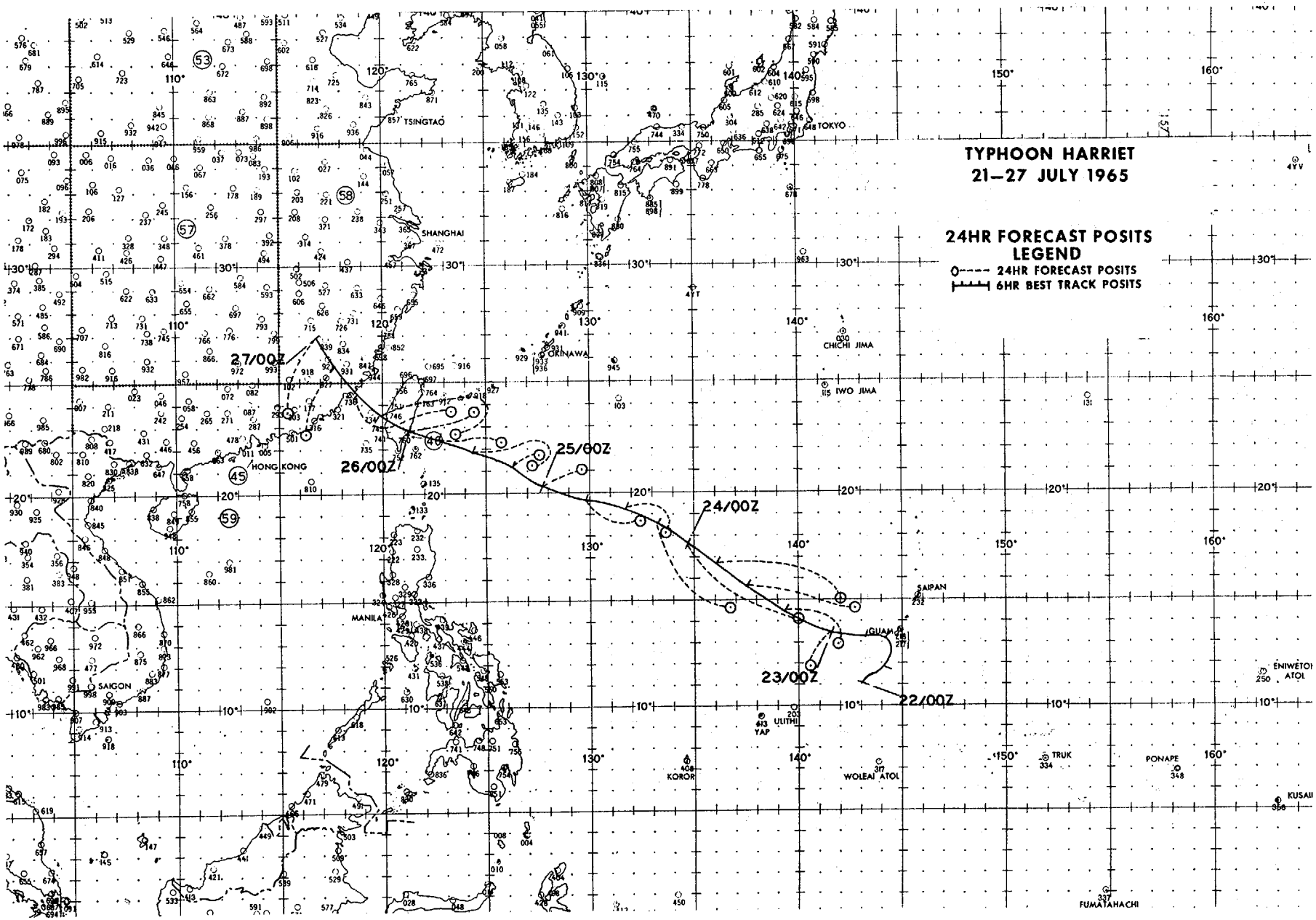
FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	202045Z	10.1N 143.4E	VW1-P-U	1500ft	--	--	1001	---	22/18	
2	210245Z	09.8N 142.7E	VW1-P-U	1500ft	--	--	1000	---	25/20	NEG WALL CLDS NEG FDR BNDS
3	210845Z	11.3N 143.3E	VW1-P-F10	965mb	--	20	999	---	25/14	CNTR CIRC NEG POS WALL CLD
4	211430Z	11.4N 141.8E	VW1-P-F5	723mb	36	--	--	3060	13/12	RDR CNTR 28 MI NE PRES CNTR
5	220015Z	10.9N 143.1E	56-P-F5	1500ft	28	35	1000	---	--/--	INDEF WALL CLD
6	220031Z	07.5N 140.0E	TIROS	--	--	--	--	---	--/--	EVIDENCE OF CIRCN AROUND 140E EXTENSIVE OVC AREA 02N TO 13N, 130 TO 154E
7	220300Z	11.3N 143.4E	56-P-F5	1500ft	38	35	998	---	--/--	
8	220845Z	13.0N 144.3E	VW1-P-F5	1400ft	--	35	992	---	--/--	CNTR VERY VAGUE NEG WALL CLDS
9	222120Z	13.2N 142.6E	56-P-P10	682mb	25	40	999	3051	10/7	
10	230026Z	14.0N 141.0E	TIROS	--	--	--	--	---	--/--	DIA 5, BNDS 3, EYE VSBL
11	230245Z	13.9N 140.4E	56-P-P3	679mb	47	70	993	3030	12/--	ILL DEFINED
12	230906Z	15.1N 138.3E	VW1-P-P2	1500ft	--	40	--	---	--/--	
13	231445Z	16.0N 136.8E	VW1-P-P5	1500ft	50	--	989	---	--/--	CNTR 11 MI ACROSS NEG WALL CLD
14	232333Z	17.6N 134.8E	54-P-P3	681mb	45	70	986	2984	15/--	
15	240016Z	17.0N 133.0E	TIROS	--	--	--	--	---	--/--	DIA 5, BNDS 3

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
16	240300Z	18.1N 133.8E	54-P-U	682mb	71	80	989	2975	16/--	WND EYE DIA 50 MI
17	240915Z	18.8N 132.4E	VW1-P-P5	943mb	48	60	982	---	26/20	CNTR CIRC 20 MI
18	241450Z	19.3N 131.0E	VW1-P-P5	702mb	55	--	--	2947	13/07	CNTR CIRC 30 MI
19	250300Z	20.6N 126.7E	56-P-P2	700mb	88	75	978	2908	16/11	CNTR DIA 40 MI
20	250910Z	21.5N 125.2E	VW1-P-P3	938mb	--	100	973	---	25/20	CNTR ELIP 30 X 20 NNE-SSW NEG WALL CLD
21	251435Z	21.7N 123.6E	VW1-P-F5	--	--	--	--	---	--/--	NO DEFINED RDR CNTR
22	252230Z	23.1N 121.8E	LND RDR	--	--	--	--	---	--/--	
23	252235Z	22.7N 121.8E	56-P-P1	700mb	55	35	--	2871	14/10	EYE CIRC 7 MI DIA WALL CLD N,W, & S 3 MI THICK
24	260245Z	23.9N 119.8E	56-P-F1	700mb	80	70	977	2902	12/10	INDEF WALL CLD
25	260514Z	24.7N 119.8E	LND RDR	--	--	--	--	---	--/--	
26	260600Z	25.2N 119.4E	LND RDR	--	--	--	--	---	--/--	
27	260925Z	24.1N 118.9E	VW1-R-F5	--	--	--	--	---	--/--	EYE CIRC DIA 31 MI
28	260954Z	24.3N 119.3E	LND RDR	--	--	--	--	---	--/--	
29	261330Z	24.6N 118.6E	VW1-R-F5	--	--	--	--	---	--/--	CNTR ON SHORE

TYPHOON HARRIET 21 JULY-27 JULY 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
210000Z	11.0N	143.0E	------	------
210600Z	11.0N	143.0E	------	------
211200Z	11.0N	143.0E	------	------
211800Z	11.0N	143.0E	------	------
220000Z	11.0N	143.0E	------	------
220600Z	11.8N	144.1E	------	------
221200Z	13.1N	144.1E	------	------
221800Z	13.2N	143.1E	------	------
230000Z	13.4N	141.5E	215-111	------
230600Z	14.4N	139.3E	120-175	------
231200Z	15.5N	137.5E	100-306	------
231800Z	16.6N	136.0E	105-364	------
240000Z	17.6N	134.7E	125-375	159-342
240600Z	18.4N	133.2E	138-304	137-430
241200Z	19.1N	131.6E	120-135	117-482
241800Z	19.6N	129.8E	113-156	118-553
250000Z	20.2N	127.8E	063-108	129-595
250600Z	21.1N	126.1E	063-90	132-500
251200Z	21.8N	124.3E	102-155	113-334
251800Z	22.3N	122.7E	089-163	112-354
260000Z	22.8N	121.2E	075-190	078-238
260600Z	23.4N	119.8E	240-90	066-225
261200Z	24.4N	118.7E	202-48	090-288
261800Z	25.6N	117.6E	204-186	080-305
270000Z	26.9N	116.7E	202-210	089-288

AVERAGE 24 HOUR ERROR 186 MI
AVERAGE 48 HOUR ERROR 380 MI


TYPHOON HARRIET
21–27 JULY 1965
24HR FORECAST POSITS
LEGEND
24HR FORECAST POSITS
6HR BEST TRACK POSITS
27/00Z
26/00Z
25/00Z
24/00Z
23/00Z
22/00Z
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

TYPHOON JEAN - 260600Z JULY TO 070000Z AUGUST

I. DATA

A. Statistics

1. Number of warnings issued - 41
2. Number of warnings with typhoon intensity - 27
3. Total distance traveled during tropical warning period - 3565 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 940mbs at 040300Z
2. Minimum observed 700mb height - 2522m. at 040850Z
3. Maximum surface wind - 140 kts (From Best Track)
4. Maximum radius of surface circulation - 625 mi

II. DEVELOPMENT

A. Initial impetus - Surge in trades followed by movement south of a deep Polar trough which prevented development by differential steering of surface and mid level vortices. When the system moved west of the Polar trough and under 200mb divergence, the typhoon developed.

B. Initial surface vortex

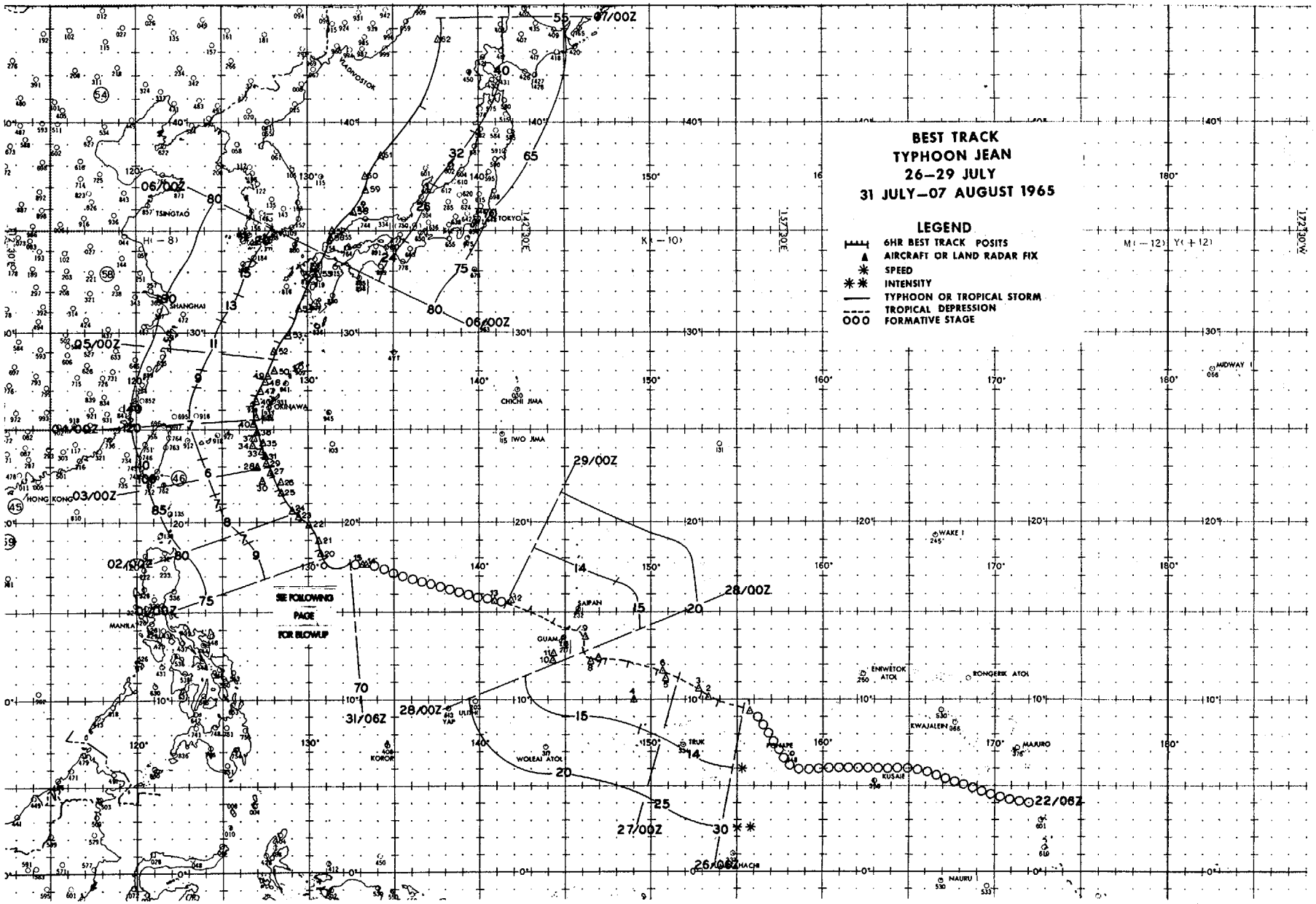
1. Junction vortex at 220600Z
2. Surface pressure less than 1008mbs

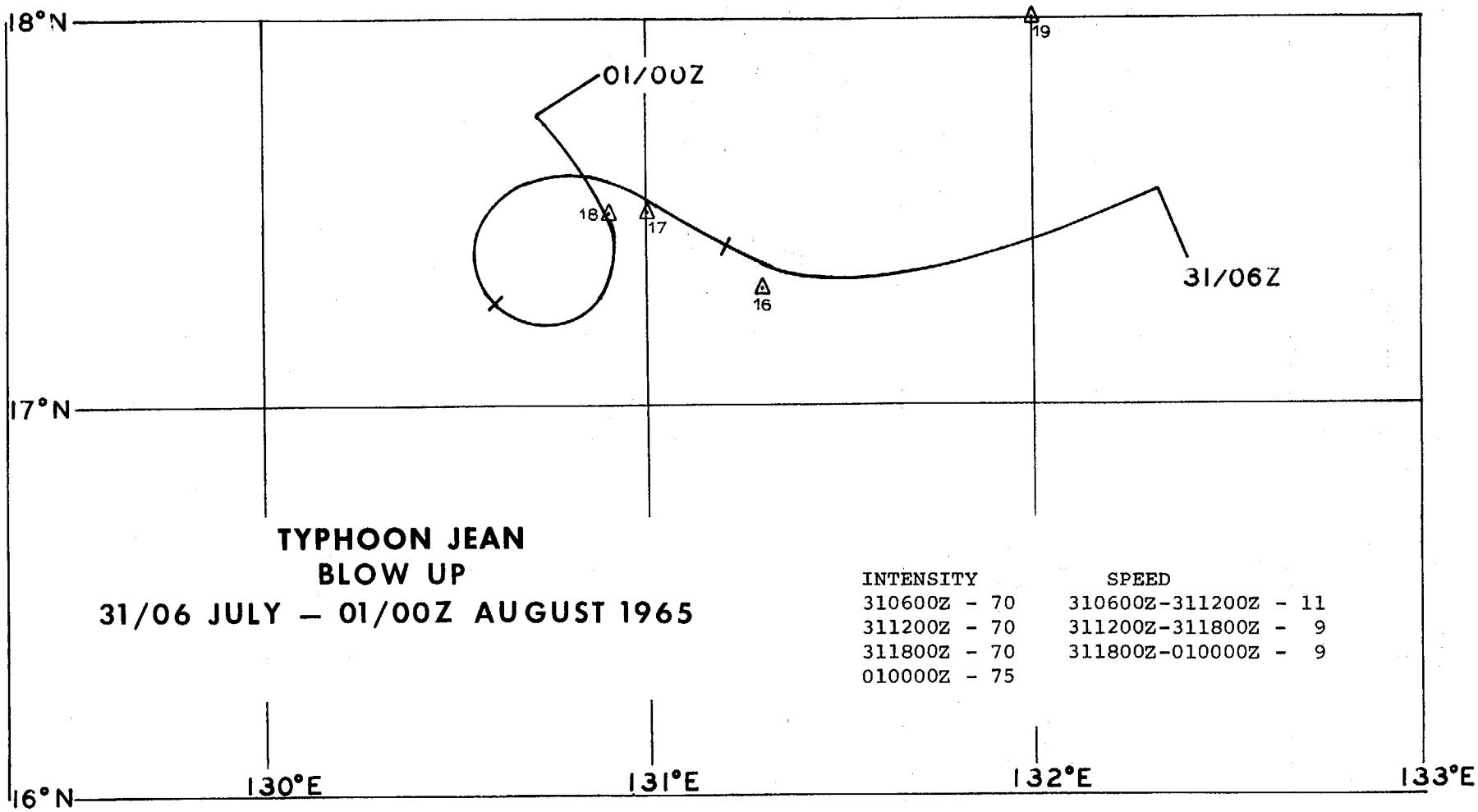
C. 200mb flow above surface vortex

1. Initial - northeasterly
2. Upon reaching typhoon intensity - northeasterly divergent flow

III. FINAL DISPOSITION

A. Became extratropical


BEST TRACK
TYPHOON JEAN
26–29 JULY
31 JULY–07 AUGUST 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
SEE FOLLOWING PAGE FOR BLOWUP
07/00Z
06/00Z
05/00Z
04/00Z
03/00Z
02/00Z
01/00Z
29/00Z
28/00Z
31/06Z
27/00Z
26/06Z
22/06Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
OKINAWA
HONG KONG
MANILA
TOKYO
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PEMPE
KUSAIE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
NAURU
WAKE I
MIDWAY I
H(−8)
K(−10)
M(−12)
Y(+12)
142°30'E
157°30'E
172°30'W



TYPHOON JEAN
BLOW UP
31/06 JULY — 01/00Z AUGUST 1965

INTENSITY	SPEED
310600Z - 70	310600Z-311200Z - 11
311200Z - 70	311200Z-311800Z - 9
311800Z - 70	311800Z-010000Z - 9
010000Z - 75	

EYE FIXES TYPHOON JEAN

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	260317Z	09.3N 155.8E	56-P-P6	1500ft	29	25	1003	3124	25/--	EYE CIRC 20 MI DIA
2	261502Z	10.1N 153.3E	VW1-P-P5	1450ft	40	--	1001	3030	12/05	EYE CIRC 30 MI DIA MAX TOPS EXCEED 40000 FT
3	262304Z	10.5N 152.6E	56-P-F10	953mb	22	20	1005	---	24/21	EYE INDEF
4	270105Z	10.0N 149.0E	TIROS	--	--	--	--	---	--/--	STAGE B, DIA X, BNDS X. CIRC OVC AREA APPROX 4 DEG DIA
5	270250Z	11.2N 150.9E	56-P-F10	955mb	22	20	1002	---	25/21	EYE INDEF
6	270845Z	11.6N 150.7E	VW1-P-F5	1500ft	25	18	1000	---	--/--	VIS VORTEX ONLY
7	271538Z	12.3N 147.0E	VW1-P-LU	1500ft	--	--	--	---	--/--	APPARENT VIS VORTEX THIS POSIT
8	272245Z	12.1N 146.5E	56-P-P4	700mb	20	12	1005	3112	11/08	CNTR CIRC 25 MI DIA
9	280300Z	13.5N 146.1E	56-P-P4	412M	16	15	1005	---	24/20	NEG EYE NO INDICATION OTHER THAN LGT SFC WND
10	280400Z	12.1N 144.3E	LND RDR	--	--	--	--	---	--/--	SANTA ROSA RDR
11	280630Z	12.5N 144.3E	LND RDR	--	--	--	--	---	--/--	SANTA ROSA RDR
12	282330Z	15.6N 141.8E	56-P-L3	953mb	21	18	1003	---	25/22	EYE INDEF CLSD SFC CIRC ELONG E-W
13	290250Z	15.5N 140.9E	56-P-L1	951mb	22	20	1003	---	25/21	EYE INDEF SFC CIRC CLSD VERY ELONG E-W

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
14	310125Z	17.6N 133.4E	54-P-P3	700mb	30	65	995	3027	12/12	EYE CIRC 30 MI DIA
15	310240Z	17.6N 133.2E	54-P-P5	700mb	30	70	996	3027	12/11	EYE CIRC 30 MI DIA
16	311110Z	17.3N 131.3E	VW1-P-P5	265M	--	--	989	---	25/19	EYE ELIP 13 X 7 N-S
17	311425Z	17.5N 131.0E	VW1-R-P10	700mb	--	--	--	---	--/--	EYE ELIP 15 X 10 N-S
18	312150Z	17.5N 130.9E	56-P-P2	700mb	58	65	987	2987	12/11	EYE CIRC 23 MI DIA SFC & 700MB WND CNTR VERTICAL, RDR EYE BEARS 220/06 MI
19	010158Z	18.0N 132.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 4, BNDS 3
20	010300Z	18.2N 130.6E	56-P-P2	700mb	60	75	984	2957	--/--	700MB WND CNTR 060/12 MI FM SFC CNTR
21	010901Z	18.9N 130.5E	VW1-P-P3	946mb	60	60	982	---	--/--	NO WALL CLD FDR BNDS ALL QUADS
22	011445Z	19.9N 130.0E	VW1-P-P2	698mb	70	--	--	2980	12/04	CNTR CIRC 20 MI DIA
23	012100Z	20.2N 129.4E	56-P-P2	700mb	60	75	980	2929	15/10	EYE CIRC 40 MI DIA OPEN W-N-E SOLID E-S-W
24	020200Z	20.6N 129.0E	56-P-P3	700mb	55	80	979	2910	12/12	EYE CIRC 10 MI DIA SOLID ALL QUADS
25	020900Z	21.5N 128.5E	VW1-R-P3	955mb	--	60	--	---	--/--	EYE CIRC 2 MI DIA SHAPE LIKE FIGURE SIX OPEN NE
26	021447Z	22.1N 128.3E	VW1-R-P5	850mb	--	--	--	---	--/--	EYE CIRC 3 MI DIA FDR BNDS ALL QUADS
27	022215Z	22.7N 127.8E	56-P-P2	700mb	60	70	959	2829	20/14	EYE CIRC 20 MI DIA WALL CLD S & W

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
28	030240Z	23.0N 127.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 4, BNDS 3 PLUS
29	030300Z	23.2N 127.5E	56-P-P2	700mb	70	80	967	2819	20/11	EYE CIRC 20 MI DIA
30	030358Z	22.2N 127.2E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
31	030710Z	23.4N 127.5E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
32	030915Z	23.7N 127.5E	VW1-R-P5	700mb	--	110	--	---	--/--	EYE ELIP N-S 13 X 10 MI WALL CLD SOLID ALL QUADS
33	031040Z	23.8N 127.3E	LND RDR	--	--	--	--	---	--/--	
34	031200Z	24.1N 126.8E	LND RDR	--	--	--	--	---	--/--	
35	031445Z	24.3N 127.3E	VW1-R-F5	700mb	--	--	--	---	--/--	EYE CIRC 8 MI DIA POORLY DEFINED
36	031538Z	24.2N 127.0E	LND RDR	--	--	--	--	---	--/--	
37	031808Z	24.4N 126.9E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
38	032000Z	24.8N 127.0E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
39	032100Z	25.0N 127.0E	56-P-P1	700mb	80	--	958	2740	19/13	EYE CIRC 30 MI DIA WALL CLDS OPEN N SOLID ALL OTHER QUADS
40	032300Z	25.2N 126.9E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
41	040000Z	25.4N 126.8E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
42	040212Z	25.5N 127.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 4, BNDS 4 EYE VSBL
43	040300Z	25.7N 126.8E	56-P-P3	700mb	70	140	940	2679	19/13	EYE CIRC 30 MI DIA WALL CLDS SOLID ALL QUADS XCPT N 10 MI THICK

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
44	040417Z	25.8N 127.0E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
45	040723Z	26.1N 127.0E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
46	040850Z	26.4N 127.0E	VW1-P-P2	688mb	58	100	--	2522	21/12	EYE ELIP NE-SW 27 X 23 MI
47	041445Z	27.0N 127.1E	VW1-R-P10	700mb	40	--	--	---	--/--	EYE CIRC 16 MI DIA WALL CLD SEMI CIRCLE ONLY 13 MI THICK
48	041537Z	27.4N 127.4E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
49	041915Z	27.7N 127.6E	LND RDR	--	--	--	--	---	--/--	OKINO & KUMI SHIMA RDRS
50	042100Z	28.0N 128.0E	LND RDR	--	--	--	--	---	--/--	OKINO & KUMI SHIMA RDRS
51	042145Z	28.2N 127.9E	56-P-P2	700mb	78	150	950	2661	19/15	EYE CIRC 35 MI DIA
52	050230Z	29.0N 128.0E	56-P-P10	700mb	70	125	945	2634	19/14	EYE CIRC 20 MI DIA
53	050900Z	29.9N 128.9E	VW1-R-P2	800ft	--	--	--	---	--/--	EYE CIRC 22 MI DIA MAIN FDR BNDS SE THROUGH SW
54	051445Z	31.2N 129.5E	VW1-R-P1	700mb	--	--	--	---	--/--	EYE CIRC 20 MI DIA WALL CLD WK N QUAD
55	052115Z	32.8N 130.5E	56-P-P2	500mb	80	130	--	---	-04/-04	RDR EYE 100 DEG 12 MI FM 500MB EYE FIXED
56	060230Z	34.7N 131.3E	LND RDR	--	--	--	--	---	--/--	KASUGA RDR
57	060300Z	35.0N 131.4E	56-P-P2	500mb	60	80	--	---	--/--	FLT LVL CNTR FIXED NO RDR EYE
58	060600Z	35.8N 132.7E	LND RDR	--	--	--	--	---	--/--	KASUGA RDR

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
59	060913Z	36.9N 133.4E	VW1-R-F2	708mb	--	--	--	---	--/--	EYE CIRC 23 MI DIA WALL CLD OPEN N & S, NOT WELL DEFINED
60	061019Z	37.5N 133.4E	VW1-P-P1	708mb	60	--	--	2923	13/10	EYE CIRC 10 MI DIA NOT WELL ORGANIZED
61	061231Z	38.3N 134.3E	VW1-R-U	--	--	--	--	---	--/--	POORLY DEFINED RDR EYE
62	062225Z	43.6N 137.7E	54-R-U	--	--	55	--	---	--/--	

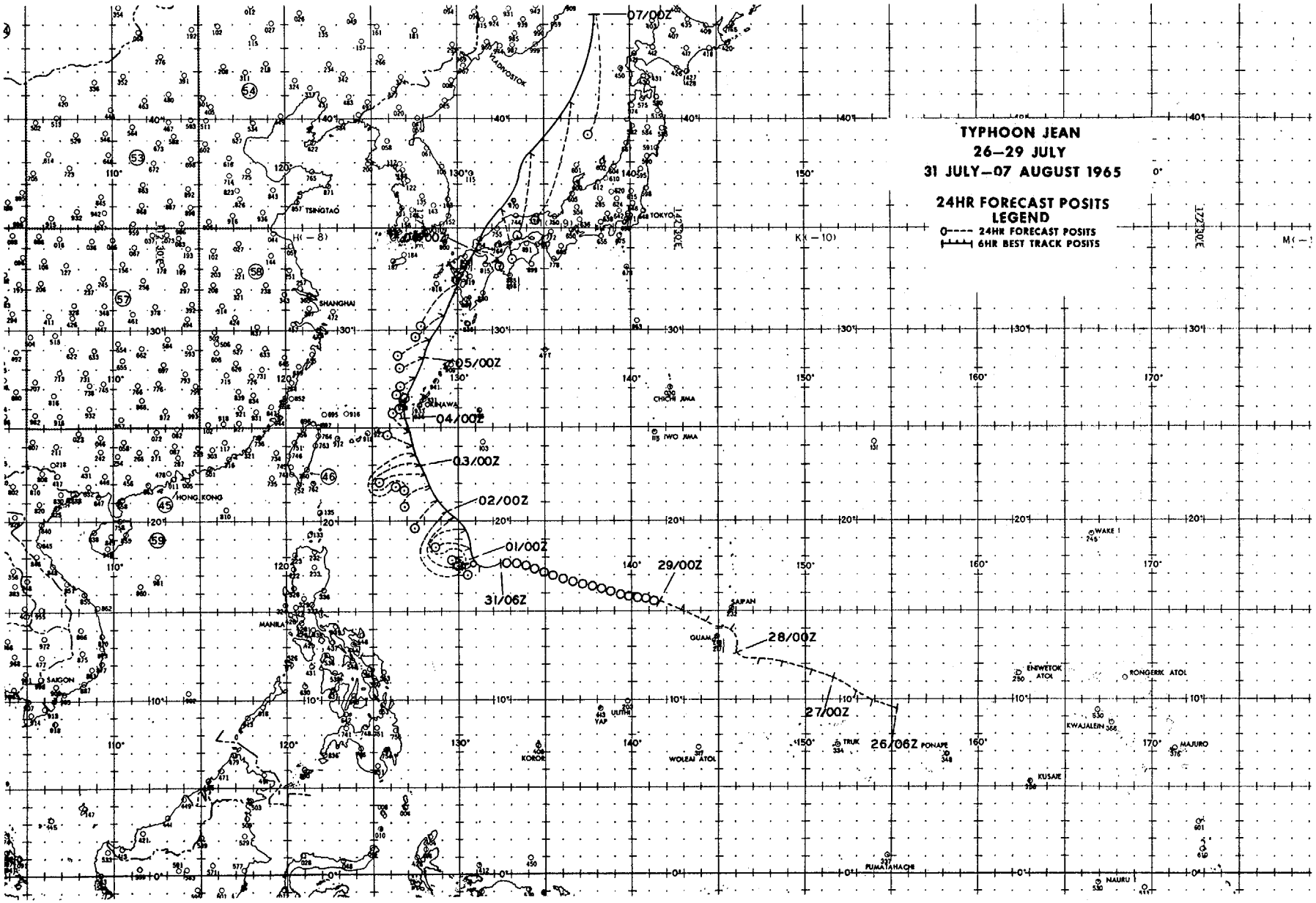
TYPHOON JEAN 26 JULY-07 AUG 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
260600Z	09.5N	155.3E	------	------
261200Z	09.9N	153.9E	------	------
261800Z	10.5N	152.7E	------	------
270000Z	11.2N	151.6E	------	------
270600Z	11.7N	150.3E	------	------
271200Z	12.1N	148.8E	------	------
271800Z	12.3N	147.4E	------	------
280000Z	12.7N	146.0E	------	------
280600Z	14.0N	145.5E	------	------
281200Z	14.4N	144.2E	------	------
281800Z	15.0N	142.9E	------	------
290000Z	15.4N	141.5E	------	------
310600Z	17.6N	132.3E	------	------
311200Z	17.4N	131.2E	------	------
311800Z	17.5N	131.0E	------	------
010000Z	17.8N	130.8E	------	------
010600Z	18.6N	130.5E	268-100	------
011200Z	19.5N	130.4E	179-148	------
011800Z	20.1N	129.7E	175-160	------
020000Z	20.4N	129.2E	166-160	------
020600Z	21.1N	128.6E	217-114	237-275
021200Z	21.8N	128.3E	234-100	196-290
021800Z	22.4N	128.0E	261-150	197-317
030000Z	22.9N	127.7E	204-95	200-261
030600Z	23.5N	127.5E	212-114	242-303
031200Z	24.0N	127.3E	291-93	242-286
031800Z	24.8N	127.1E	323-72	262-337
040000Z	25.4N	126.9E	344-33	217-187
040600Z	26.1N	126.8E	321-36	231-209
041200Z	26.7N	127.1E	210-34	308-160
041800Z	27.6N	127.4E	230-57	322-152
050000Z	28.6N	128.0E	248-88	282-92
050600Z	29.6N	128.4E	243-122	296-120
051200Z	30.7N	129.3E	234-112	230-196
051800Z	32.1N	130.0E	222-162	228-257

TYPHOON JEAN 26 JULY-07 AUG 1965
POSITION AND FORECAST VERIFICATION DATA (CONT'D)

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
060000Z	33.8N	131.0E	123-90	241-251
060600Z	35.8N	132.5E	170-150	237-308
061200Z	38.3N	134.1E	189-222	218-418
061800Z	40.7N	136.5E	198-330	215-580
070000Z	44.5N	137.8E	183-337	162-526

AVERAGE 24 HOUR ERROR 128 MI
AVERAGE 48 HOUR ERROR 276 MI


TYPHOON JEAN
26–29 JULY
31 JULY–07 AUGUST 1965
24HR FORECAST POSITS
LEGEND
24HR FORECAST POSITS
6HR BEST TRACK POSITS
07/00Z
05/00Z
04/00Z
03/00Z
02/00Z
01/00Z
31/06Z
29/00Z
28/00Z
27/00Z
26/06Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
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HONG KONG
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RONGERIK ATOL
KWAJALEIN
MAJURO
KUSAIE
PONAPE
TRUK
WOLEAI ATOL
KOROR
ULITHI
YAP
PUMATAHACHI
NAURU I

TYPHOON IVY - 271800Z TO 311800Z JULY

I. DATA

A. Statistics

1. Number of warnings issued - 18
2. Number of warnings with typhoon intensity - 12
3. Total distance traveled during tropical warning period - 1100 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 991 mbs at 300915Z
2. Minimum observed 700mb height - 2996m. at 310300Z
3. Maximum surface wind - 80 kts (From Best Track)
4. Maximum radius of surface circulation - 325 mi

II. DEVELOPMENT

A. Initial impetus - Fracture of MPT (Developed in residual trough along ITCZ left by Typhoon HARRIET to the east of the Philippine Islands)

B. Initial surface vortex

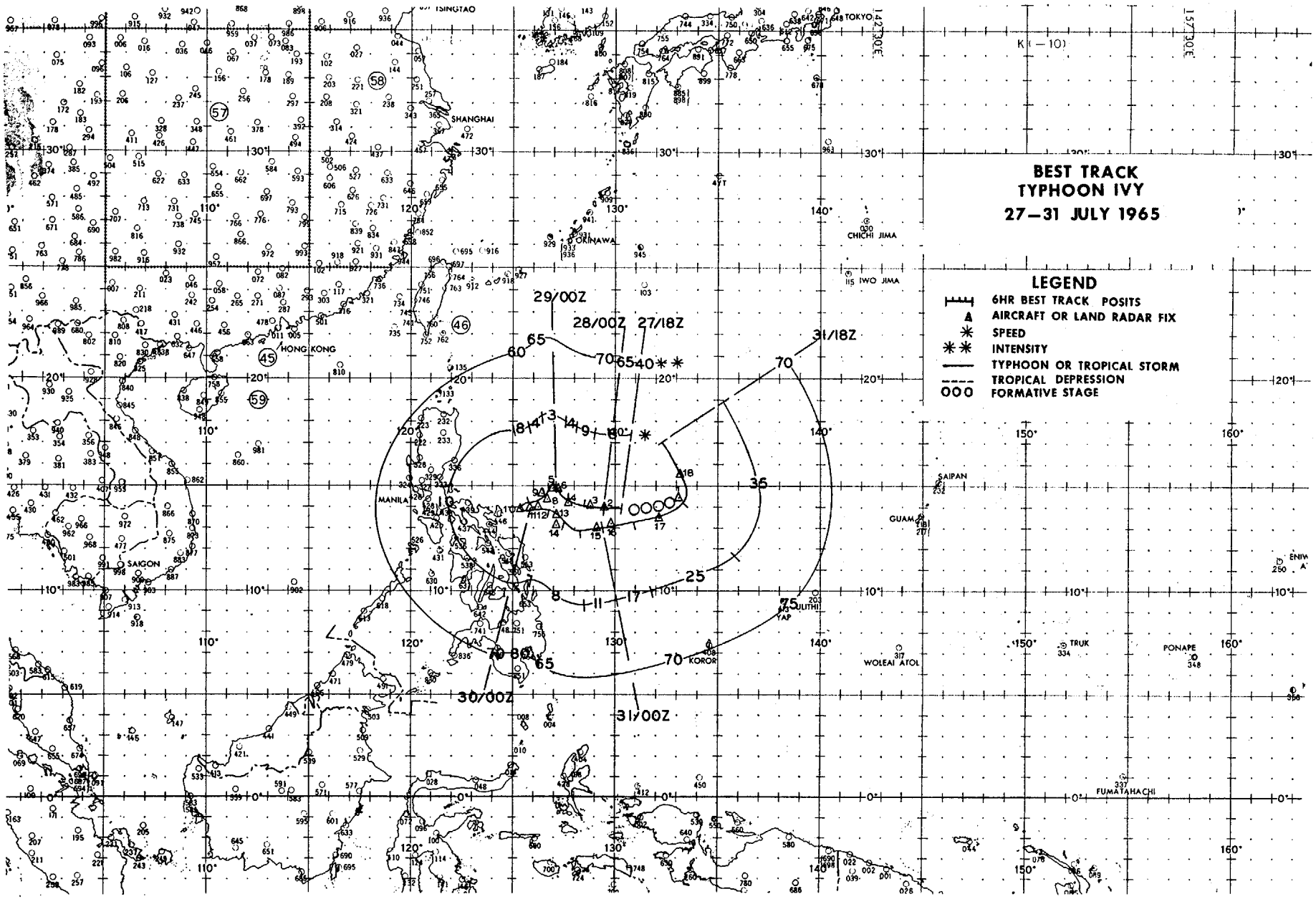
1. Junction vortex at 262100Z
2. Surface pressure less than 1008mbs

C. 200mb flow above surface vortex

1. Initial - northeasterly
2. Upon reaching typhoon intensity - northerly

III. FINAL DISPOSITION

A. Absorbed into circulation of Typhoon JEAN


BEST TRACK
TYPHOON IVY
27–31 JULY 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
29/00Z
28/00Z
27/18Z
31/18Z
30/00Z
31/00Z
TSINGTAO
TOKYO
SHANGHAI
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
FUMATAHACHI
ENIWETOK

EYE FIXES TYPHOON IVY

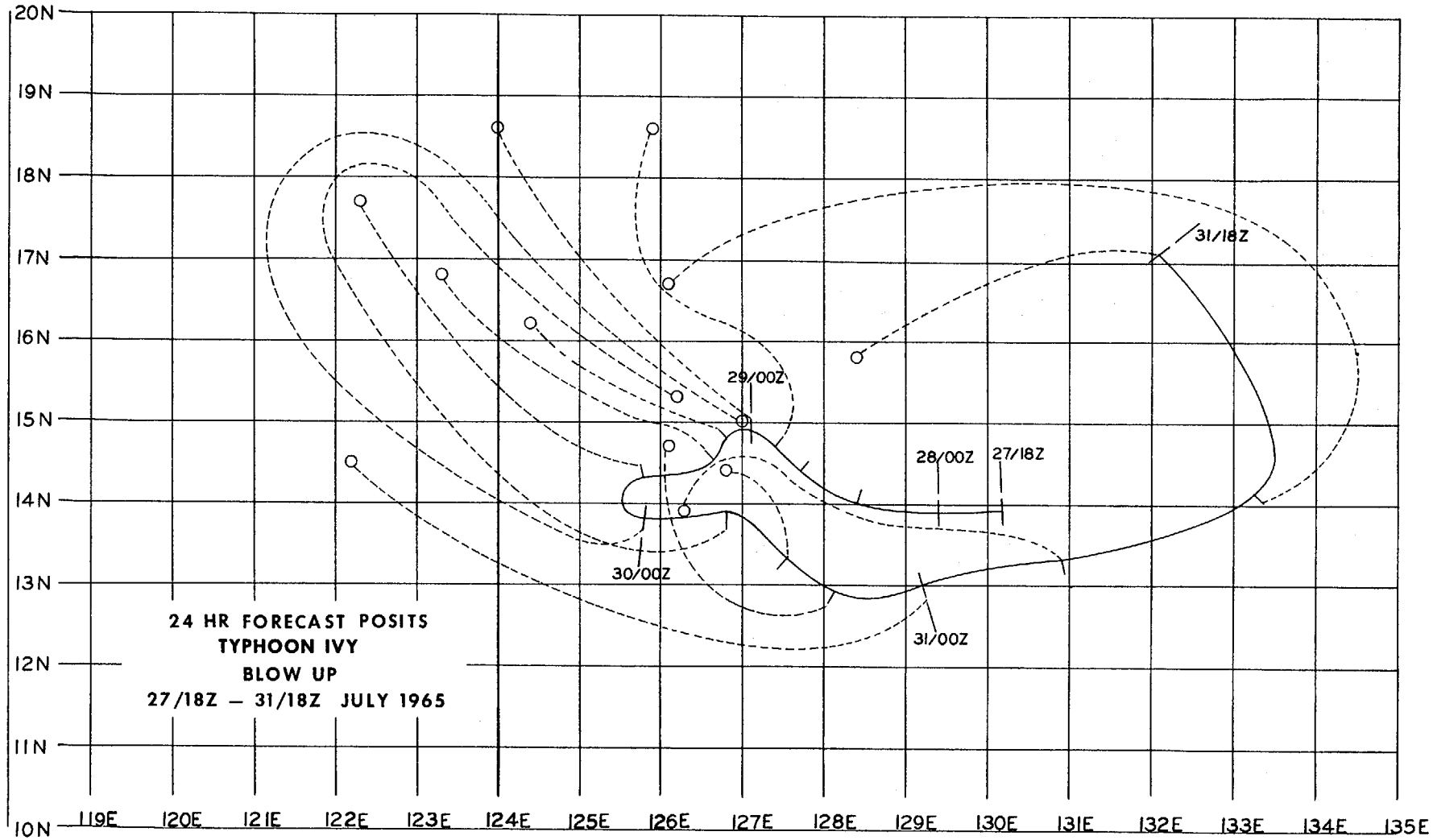
FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	262115Z	14.3N 133.1E	54-R-U	--	--	--	--	---	--/--	GOOD WALL CLD EYE ELIP 10 X 13 MI 3 OR 4 GOOD FDR BNDS
2	272200Z	14.0N 129.5E	ACFT RDR	--	--	--	--	---	--/--	USAF RDR FIX
3	280300Z	14.1N 128.9E	56-P-P5	700mb	45	70	--	3048	19/--	EYE CIRC 20 MI DIA CLDS DISORGANIZED AT 10000 FT
4	281008Z	14.2N 127.8E	VW1-P-P5	960mb	--	55	994	---	27/20	EYE CIRC 20 MI DIA
5	281445Z	14.9N 127.0E	VW1-R-F3	700mb	80	--	--	---	--/--	EYE CIRC 25 MI DIA GENERAL DSPTN OF CNTR
6	282300Z	14.9N 127.2E	56-P-F2	691mb	45	45	--	3048	14/09	EYE CIRC 10 MI DIA 700MB WND CNTR 210/15 MI FM EYE
7	290300Z	14.9N 126.9E	56-P-P2	711mb	65	45	992	3048	18/10	EYE CIRC 15 MI DIA 700MB WND CNTR 240/32 MI FM EYE
8	290910Z	14.4N 126.8E	VW1-P-F5	960mb	35	35	--	---	25/22	EYE CIRC 20 MI DIA NO WALL CLD SFC WND CNTR REPTD
9	291445Z	14.6N 126.5E	VW1-R-F10	962mb	--	--	--	---	--/--	EYE CIRC 25 MI DIA
10	292100Z	13.9N 125.3E	56-R-P4	700mb	40	--	--	---	--/--	EYE CIRC 8 MI DIA
11	300050Z	13.9N 125.9E	56-P-P2	689mb	45	70	999	3072	05/05	EYE ELIP N-S 30 X 20 MI
12	300300Z	13.9N 126.3E	56-P-P4	688mb	35	80	997	3057	11/02	SFC WND EYE 3 MI DIA RDR EYE 40 MI DIA

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
13	300915Z	13.7N 127.2E	VW1-P-P1	970mb	--	35	991	---	26/14	EYE ELIP NE-SW 37 X 26 MI WND EYE CIRC 10 MI DIA
14	301445Z	13.1N 127.2E	VW1-R-P10	700mb	30	--	--	---	--/--	EYE ELIP E-W 32 X 15 MI
15	302330Z	13.0N 129.1E	56-P-P2	722 mb	35	55	--	3011	15/10	POORLY DEFINED EYE CIRC 10 MI DIA
16	310300Z	13.2N 129.9E	56-P-P5	722mb	40	50	--	2996	14/10	RDR EYE 180/24 MI FM SFC CNTR EYE CIRC 15 MI DIA
17	310927Z	13.5N 132.2E	VW1-P-P5	958mb	--	75	994	---	24/18	EYE ELIP N-S 15 X 10 MI NUMEROUS FDR BNDS
18	311445Z	15.6N 133.3E	VW1-R-P10	1500ft	--	--	--	---	--/--	EYE ELIP E-W 20 X 18 MI APPEARS CLSD ALL QUADS

TYPHOON IVY 27 JULY-31 JULY 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
271800Z	13.9N	130.2E	------	------
280000Z	13.9N	129.4E	------	------
280600Z	14.0N	128.4E	------	------
281200Z	14.4N	127.7E	------	------
281800Z	14.7N	127.4E	339-255	------
290000Z	14.9N	127.1E	322-285	------
290600Z	14.8N	126.8E	302-160	------
291200Z	14.5N	126.7E	306-233	------
291800Z	14.3N	125.8E	315-295	------
300000Z	13.8N	125.8E	045-98	329-614
300600Z	13.9N	126.8E	340-96	313-500
301200Z	13.3N	127.5E	328-74	315-613
301800Z	12.9N	128.1E	312-160	316-736
310000Z	13.0N	129.2E	282-424	304-365
310600Z	13.3N	130.9E	279-275	298-520
311200Z	14.1N	133.3E	291-445	278-510
311800Z	17.1N	132.1E	251-225	260-470

AVERAGE 24 HOUR ERROR 233 MI
AVERAGE 48 HOUR ERROR 541 MI


20N
19N
18N
17N
16N
15N
14N
13N
12N
11N
10N
119E
120E
121E
122E
123E
124E
125E
126E
127E
128E
129E
130E
131E
132E
133E
134E
135E
29/00Z
30/00Z
31/00Z
28/00Z
27/18Z
31/18Z
24 HR FORECAST POSITS
TYPHOON IVY
BLOW UP
27/18Z — 31/18Z JULY 1965

TYPHOON LUCY - 150600Z TO 230600Z AUGUST

I. DATA

A. Statistics

1. Number of warnings issued - 33
2. Number of warnings with typhoon intensity - 27
3. Total distance traveled during tropical warning period - 2583 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 940mbs at 200300Z
2. Minimum observed 700mb height - 2609m. at 190240Z
3. Maximum surface wind - 150 kts (From Best Track)
4. Maximum radius of surface circulation - 425 mi

II. DEVELOPMENT

A. Initial impetus - Fracture of southwestern tip of Polar trough in mid levels.

B. Initial surface vortex

1. A junction vortex could be tracked northwestward from 130000Z. However, just prior to 150600Z a reconnaissance aircraft proceeding northward from the junction vortex encountered light and variable winds and then increasing westerly winds, followed by the initial fix on LUCY. Therefore, LUCY actually formed in the embedded vortex.

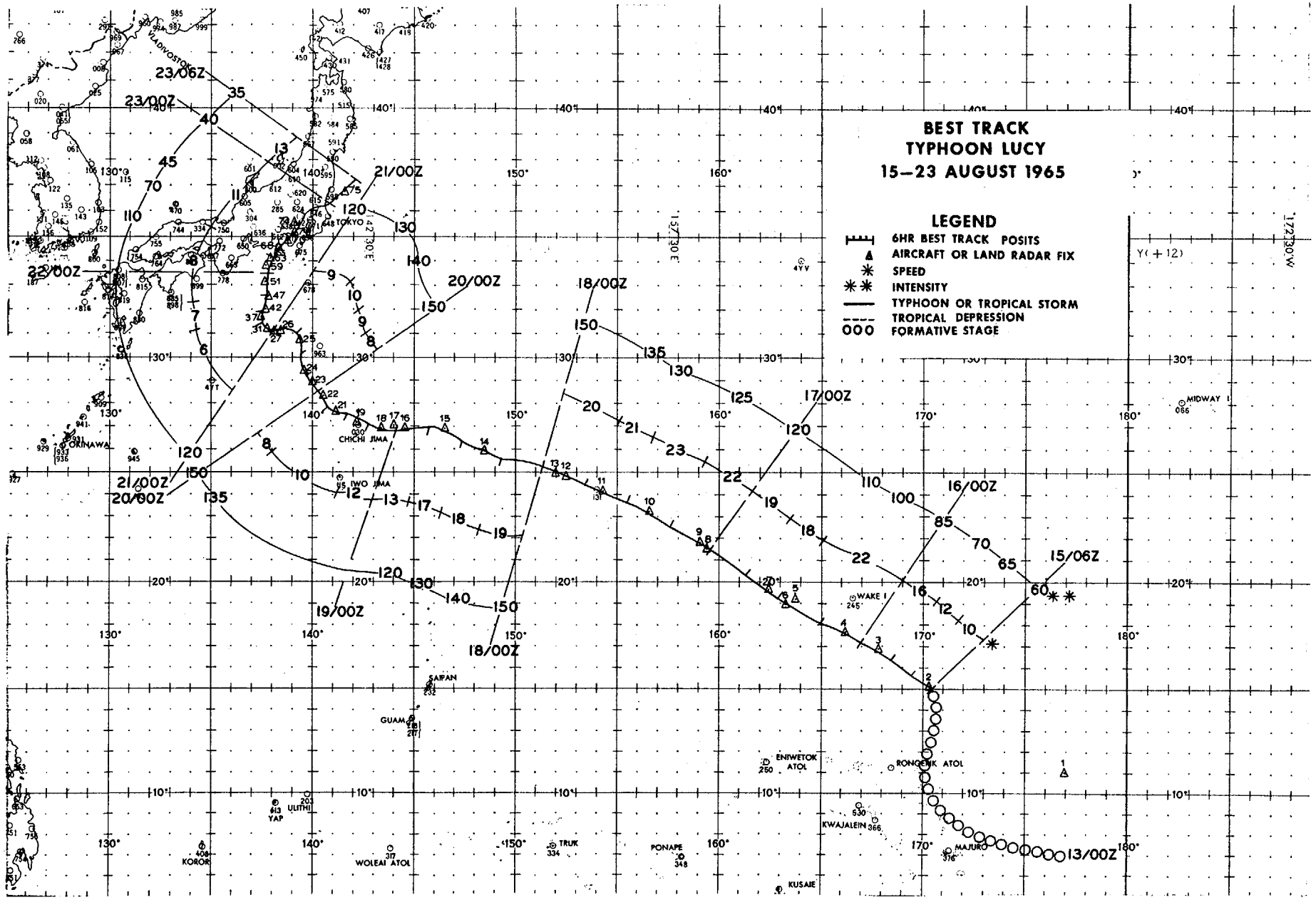
2. Surface pressure less than 1007mbs

C. 200mb flow above surface vortex

1. Initial - northeasterly
2. Upon reaching typhoon intensity - southerly

III. FINAL DISPOSITION

A. Became extratropical


BEST TRACK
TYPHOON LUCY
15–23 AUGUST 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
VLADIVOSTOK
TOKYO
CHICHI JIMA
IWO JIMA
OKINAWA
WAKE I
MIDWAY I
SAIPAN
GUAM
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
KUSAIE
PONAPE
TRUK
WOLEAI ATOL
ULITHI
YAP
KOROR
23/06Z
23/00Z
22/00Z
21/00Z
20/00Z
19/00Z
18/00Z
17/00Z
16/00Z
15/06Z
13/00Z
Y(+12)

EYE FIXES TYPHOON LUCY

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	112348Z	11.0N 177.0E	TIROS	--	--	--	--	---	--/--	STAGE A DIA X BNDS X OVC AREA FIVE DEG DIA
2	150610Z	15.1N 170.3E	54-P-P3	700mb	--	60	993	3054	16/--	EYE CIRC 25 MI DIA
3	152052Z	16.8N 167.8E	VW1-P-P5	750ft	--	70	993	3101	27/23	EYE CIRC 18 MI DIA
4	160250Z	17.6N 166.2E	54-P-P2	700mb	--	100	998	3088	14/--	EYE CIRC 15 MI DIA
5	160915Z	19.2N 163.8E	VW1-R-P5	700mb	--	--	--	---	--/--	EYE CIRC 22 MI DIA
6	161000Z	18.9N 163.3E	VW1-R-U	700mb	--	--	--	---	--/--	EYE REFORMED
7	161447Z	19.6N 162.4E	VW1-R-P5	700mb	--	--	--	---	--/--	EYE CIRC 13 MI DIA
8	170020Z	21.4N 159.5E	54-P-P2	700mb	--	120	993	3060	13/--	EYE CIRC 10 MI DIA
9	170215Z	21.7N 159.1E	54-P-P2	700mb	--	120	--	2990	16/--	EYE CIRC 10 MI DIA
10	170900Z	23.2N 156.6E	VW1-R-P5	1500ft	--	--	--	---	--/--	EYE CIRC 12 MI DIA
11	171445Z	24.1N 154.3E	VW1-R-P10	800mb	--	--	--	---	--/--	EYE CIRC 7 MI DIA
12	172130Z	24.8N 152.5E	54-R-P1	700mb	80	150	--	---	--/--	EYE CIRC 5 MI DIA
13	180300Z	24.9N 152.0E	54-R-P5	700mb	75	150	--	---	--/--	EYE CIRC 5 MI DIA
14	180900Z	25.9N 148.4E	VW1-R-P10	951mb	--	90	--	---	--/--	EYE ELIP 34 X 30 NW-SE
15	181445Z	26.8N 146.6E	VW1-R-P15	905mb	50	--	--	---	--/--	CONCENTRIC EYE CIRC 4 MI DIA

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
16	182100Z	26.8N 144.6E	54-P-P7	700mb	65	85	946	2630	18/14	EYE CIRC 10 MI DIA
17	190123Z	27.0N 144.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 5, BNDS 3
18	190240Z	26.9N 143.4E	54-P-P5	700mb	90	90	944	2609	18/11	EYE CIRC 20 MI DIA
19	190900Z	27.1N 142.2E	VISUAL	--	--	110	--	---	--/--	CHICHI JIMA IN S EDGE WALL CLD EST EYE 4 MI N
20	190945Z	27.3N 142.2E	VW1-R-P2	950mb	28	40	--	---	--/--	EYE CIRC 21 MI DIA
21	191445Z	27.6N 141.2E	VW1-R-P2	700mb	--	--	--	---	--/--	EYE CIRC 17 MI DIA
22	192156Z	28.3N 140.5E	54-P-P2	700mb	--	150	960	2725	14/--	EYE CIRC
23	200300Z	28.9N 140.0E	54-P-P2	700mb	70	150	940	2728	--/--	EYE CIRC 15 MI DIA
24	200845Z	29.4N 139.6E	VW1-R-P10	947mb	95	90	--	---	--/--	EYE CIRC 27 MI DIA
25	201515Z	30.7N 139.4E	VW1-R-P10	700mb	--	--	--	---	--/--	
26	202138Z	31.1N 138.3E	54-P-P2	697mb	90	70	953	2691	16/13	EYE CIRC 40 MI DIA WALL CLD WK ALL QUADS
27	210000Z	31.1N 138.0E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE DIA 70 KM
28	210203Z	31.2N 137.8E	LND RDR	--	--	--	--	---	--/--	EYE CLEAR
29	210216Z	31.0N 137.5E	TIROS	--	--	--	--	---	--/--	STAGE X DIA 4 BNDS 4
30	210230Z	31.3N 137.6E	54-P-P2	700mb	85	110	953	2685	17/10	EYE CIRC 35 MI DIA WALL CLD MDT 6 MI THK ALL QUADS
31	210300Z	31.2N 137.7E	LND RDR	--	--	--	--	---	--/--	EYE DIA 40 KM
32	210400Z	31.3N 137.7E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE DIA 60 KM

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
33	210500Z	31.4N 137.7E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE CLEAR
34	210600Z	31.4N 137.7E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR
35	210800Z	31.6N 137.6E	LND RDR	--	--	--	--	---	--/--	EYE CLEAR EYE DIA 50 KM
36	210900Z	31.6N 137.6E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE DIA 60 KM
37	210900Z	31.6N 137.4E	VW1-R-P10	207mb	60	85	--	---	--/--	EYE CIRC 32 MI DIA
38	211000Z	31.6N 137.6E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE CLEAR EYE DIA 60 KM
39	211100Z	31.7N 137.5E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE CLEAR EYE DIA 60 KM
40	211200Z	31.8N 137.6E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE CLEAR
41	211300Z	31.8N 137.6E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE CLEAR
42	211400Z	32.0N 137.7E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE CLEAR EYE DIA 16 KM
43	211445Z	32.2N 138.0E	VW1-R-P15	701mb	47	--	--	---	--/--	EYE CIRC 32 MI DIA
44	211500Z	32.3N 137.8E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE CLEAR EYE DIA 40 KM
45	211600Z	32.3N 137.7E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE CLEAR EYE DIA 50 KM
46	211700Z	32.6N 137.7E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR
47	211800Z	32.5N 137.8E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR
48	211900Z	32.6N 137.8E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR
49	212000Z	32.8N 137.7E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR

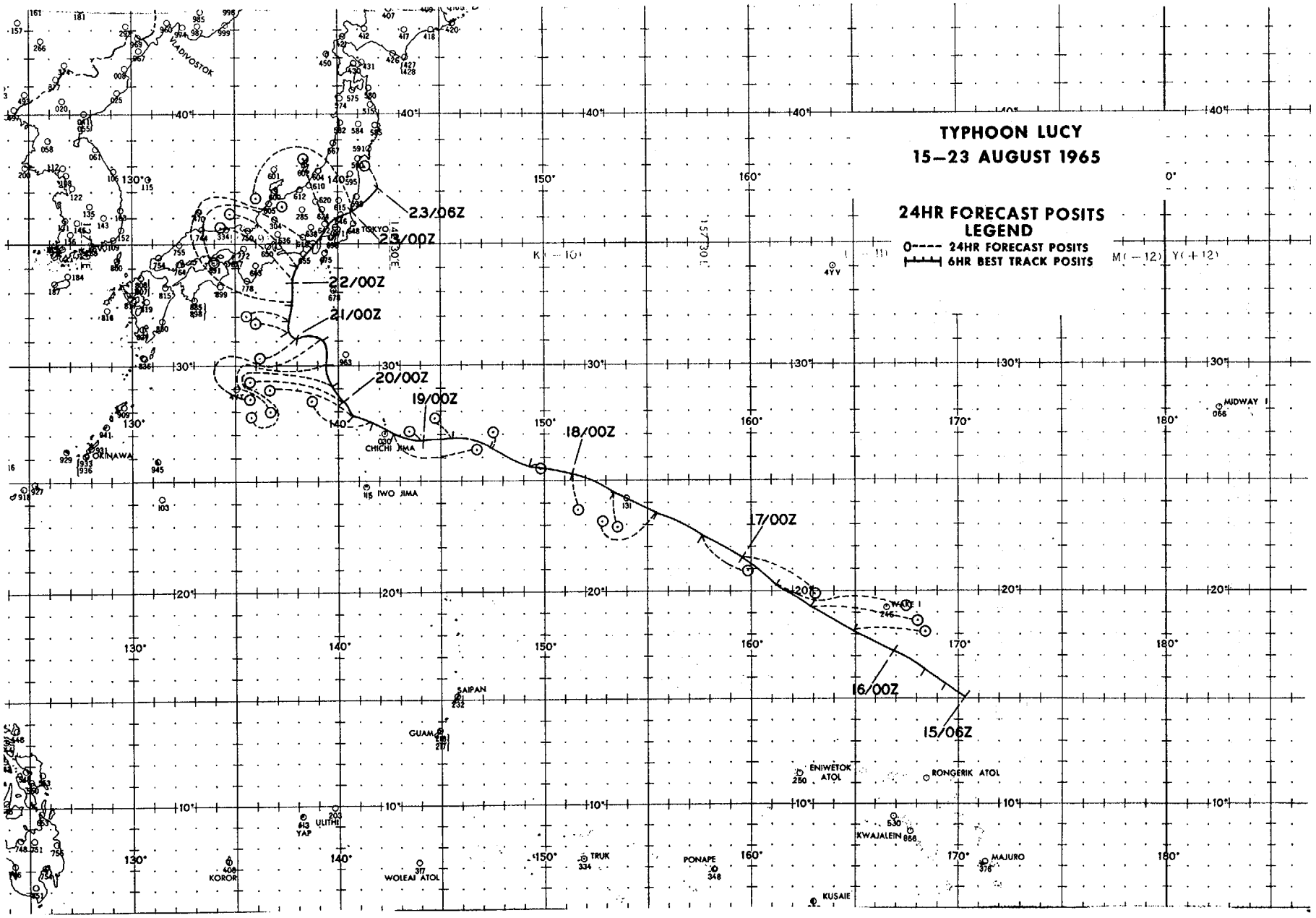
FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
50	212100Z	33.0N 137.7E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR 60 KM X 40 KM NNE-SSW
51	212200Z	33.1N 137.7E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE CLEAR
52	212235Z	33.2N 137.6E	54-R-P3	18,000 ft	--	--	--	---	--/--	EYE 35 MI DIA
53	212300Z	33.3N 137.7E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE CLR & CIRC
54	212330Z	33.3N 137.5E	54-P-P2	700mb	--	--	965	2777	16/--	EYE CIRC 25 MI DIA
55	220000Z	33.4N 137.7E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE CLEAR
56	220100Z	33.5N 137.7E	LND RDR	--	--	--	--	---	--/--	EYE CLEAR
57	220137Z	33.5N 137.5E	TIROS	--	--	--	--	---	--/--	STAGE X DIA 5 BNDS 4 EYE VSBL
58	220200Z	33.6N 137.7E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE CLEAR
59	220300Z	33.8N 137.7E	54-P-P2	700mb	--	--	968	2789	17/--	EYE CIRC 30 MI DIA
60	220300Z	33.7N 137.9E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR EYE CLEAR
61	220400Z	33.9N 137.8E	54-P-2	700mb	--	--	979	2792	16/--	EYE CIRC 30 MI DIA
62	220400Z	33.8N 138.0E	LND RDR	--	--	--	--	---	--/--	CLR EYE
63	220500Z	34.1N 137.9E	54-P-P2	700mb	--	--	987	2798	16/--	EYE CIRC 30 MI DIA
64	220500Z	33.9N 138.2E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR CLR EYE
65	220600Z	34.1N 138.2E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR CLR EYE

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
66	220700Z	34.3N 138.3E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR CLR EYE
67	220800Z	34.4N 138.4E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR CLR EYE
68	220900Z	34.6N 138.3E	VW1-R-P5	700mb	--	50	--	---	--/--	EYE CIRC 30 MI DIA
69	221015Z	34.7N 138.7E	VW1-R-U	700mb	--	--	--	---	--/--	
70	221100Z	34.8N 138.8E	LND RDR	--	--	--	--	---	--/--	SML BUT CLR EYE
71	221200Z	34.9N 138.9E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR
72	221300Z	35.2N 139.1E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR CLSD EYE
73	221400Z	35.4N 139.2E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR CLSD EYE
74	221500Z	35.4N 139.1E	LND RDR	--	--	--	--	---	--/--	MT FUJI RDR
75	230320Z	36.7N 141.6E	54-P-P2	500mb	--	--	--	---	0/--	

TYPHOON LUCY 15 AUG-23 AUG 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
150600Z	15.0N	170.3E	------	------
151200Z	15.6N	169.5E	------	------
151800Z	16.3N	168.4E	------	------
160000Z	17.1N	167.0E	------	------
160600Z	18.1N	165.0E	089-196	------
161200Z	19.2N	162.9E	096-295	------
161800Z	20.2N	161.3E	098-350	------
170000Z	21.3N	159.6E	115-216	------
170600Z	22.5N	157.7E	130-156	103-496
171200Z	23.6N	154.5E	262-154	106-587
171800Z	24.4N	153.4E	174-092	104-674
180000Z	25.2N	151.3E	167-090	120-442
180600Z	25.6N	149.3E	104-032	123-299
181200Z	26.3N	147.4E	012-050	273-130
181800Z	26.8N	145.6E	325-070	149-95
190000Z	26.7N	144.1E	312-042	122-98
190600Z	27.0N	142.7E	100-222	326-99
191200Z	27.4N	141.7E	292-170	298-172
191800Z	27.8N	140.7E	288-225	287-275
200000Z	28.5N	140.2E	281-240	273-287
200600Z	29.2N	139.7E	249-221	147-80
201200Z	30.1N	139.4E	228-182	277-486
201800Z	31.0N	139.2E	230-230	278-565
210000Z	31.1N	138.1E	242-106	277-500
210600Z	31.4N	137.5E	284-80	260-405
211200Z	31.9N	137.6E	273-106	243-338
211800Z	32.6N	137.8E	354-234	245-409
220000Z	33.4N	137.6E	310-212	261-332
220600Z	34.1N	138.0E	308-205	287-226
221200Z	34.9N	138.9E	260-245	278-244
221800Z	35.8N	139.7E	335-165	042-502
230000Z	36.3N	140.9E	275-242	009-230
230600Z	37.2N	142.1E	318-064	025-250

AVERAGE 24 HOUR ERROR 169 MI
AVERAGE 48 HOUR ERROR 329 MI


TYPHOON LUCY
15–23 AUGUST 1965
24HR FORECAST POSITS
LEGEND
0---- 24HR FORECAST POSITS
6HR BEST TRACK POSITS
23/06Z
23/00Z
22/00Z
21/00Z
20/00Z
19/00Z
18/00Z
17/00Z
16/00Z
15/06Z
VLADIVOSTOK
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
WAKE I
MIDWAY I

TYPHOON MARY - 150600Z TO 191200Z AUGUST

I. DATA

A. Statistics

1. Number of warnings issued - 18
2. Number of warnings with typhoon intensity - 14
3. Total distance traveled during tropical warning period - 1000 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 936mbs at 170310Z
2. Minimum observed 700mb height - 2560m. at 170310Z
3. Maximum surface wind - 150 kts (From Best Track)
4. Maximum radius of surface circulation - 600 mi

II. DEVELOPMENT

A. Initial impetus - Juxtaposition of Polar trough and easterly wave and subsequent fracture.

B. Initial surface vortex

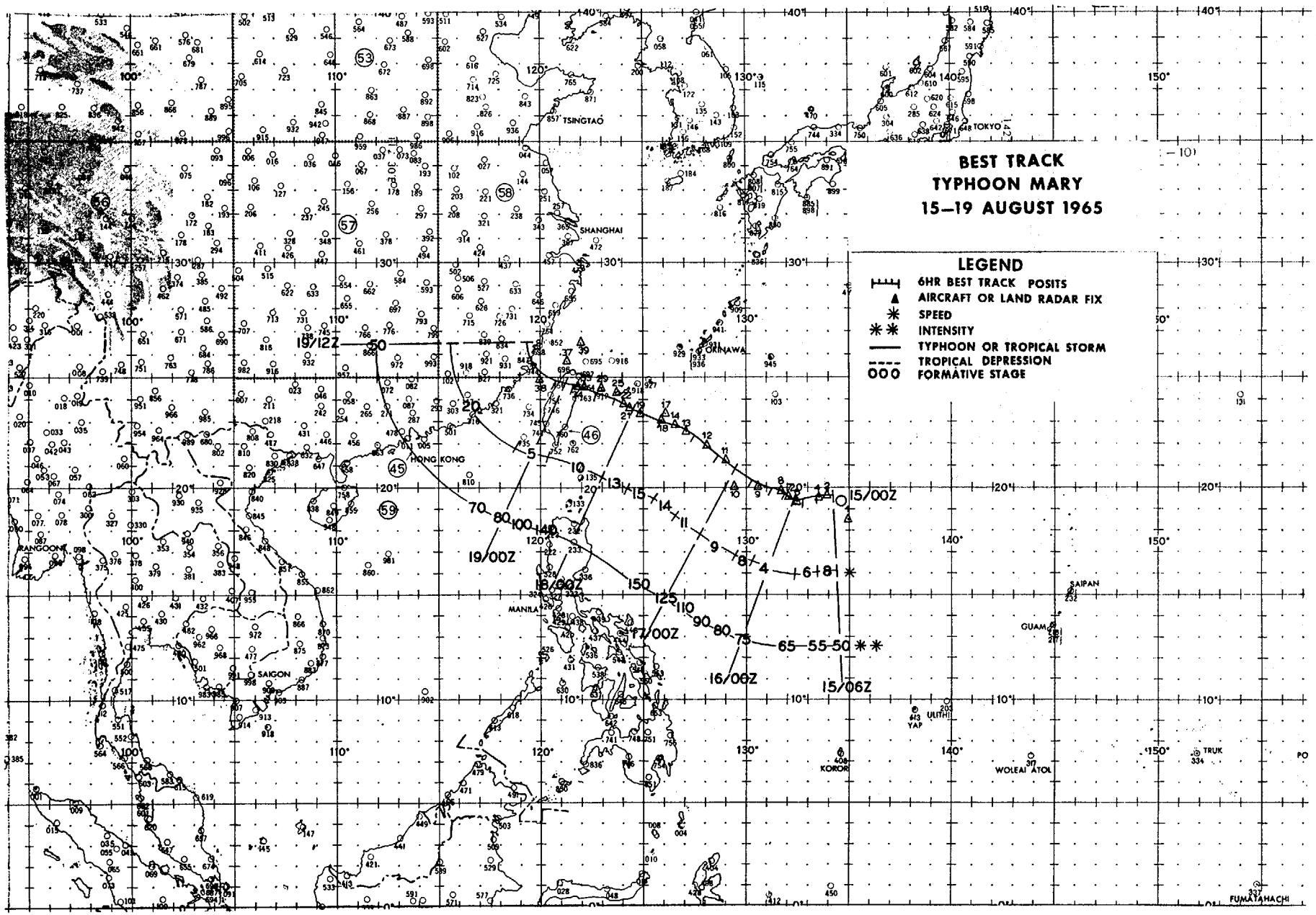
1. Embedded vortex at 150000Z
2. Surface pressure less than 1006mbs

C. 200mb flow above surface vortex

1. Initial - northeast
2. Upon reaching typhoon intensity - near center of anticyclone

III. FINAL DISPOSITION

A. Dissipated over land


BEST TRACK
TYPHOON MARY
15–19 AUGUST 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
HONG KONG
RANGOON
MANILA
SAIGON
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
FUMATAHACHI
19/12Z
19/00Z
18/00Z
17/00Z
16/06Z
15/06Z
15/00Z

EYE FIXES TYPHOON MARY

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	150142Z	18.5N 135.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 3.5, BNDS 3 WELL DEVELOPED BNDG TO S
2	150745Z	19.6N 134.0E	VW1-P-P5	955mb	50	50	980	---	27/20	EYE CIRC 34 MI DIA SYSTEM HAS CLASSIC PRESENTATION
3	150845Z	19.6N 133.8E	VW1-R-P10	955mb	50	50	--	---	--/--	EYE CIRC 26 MI DIA EYE TIGHTENING
4	151000Z	19.5N 133.6E	VW1-R-10	1500ft	--	--	--	---	--/--	
5	151045Z	19.5N 133.5E	VW1-R-10	1500ft	--	--	--	---	--/--	
6	152255Z	19.3N 132.4E	54-P-P4	700mb	62	75	982	2920	18/--	EYE CIRC 15 MI DIA
7	160300Z	19.5N 132.1E	54-P-P4	700mb	65	80	965	2883	15/07	EYE CIRC 15 MI DIA
8	160845Z	19.8N 131.7E	VW1-P-P10	700mb	--	80	968	---	16/10	EYE CIRC 25 MI DIA CLASSIC FDR BNDS ALL QUADS
9	161445Z	20.0N 130.6E	VW1-R-P10	700mb	--	--	--	---	--/--	EYE CIRC 20 MI DIA FDR BNDS 250 MI NE-E-S STM APPEARS SLIGHTLY WKR
10	170223Z	20.0N 129.5E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 4, BNDS 4 EYE VSBL EST POSIT
11	170310Z	21.2N 129.0E	56-P-P2	700mb	120	150	936	2560	19/07	EYE CIRC 20 MI DIA RDR CNTR 360 DEG 05 MI FM SFC CNTR
12	170843Z	21.9N 128.1E	VW1-R-P2	900ft	--	90	--	---	--/--	EYE CIRC 10 MI DIA FDR BNDS ALL QUADS

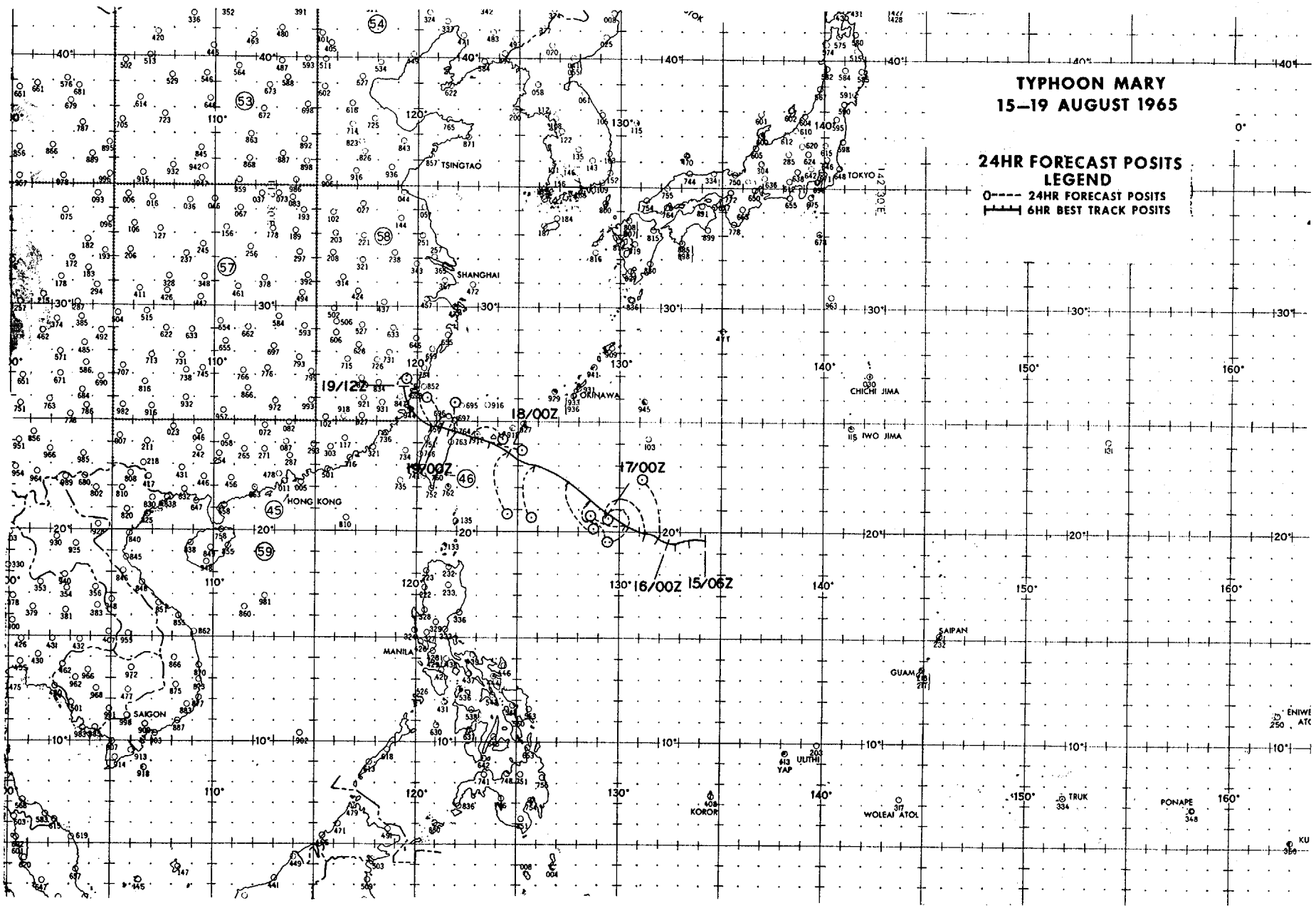
FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
13	171300Z	22.4N 127.1E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
14	171445Z	22.8N 126.6E	VW1-R-P10	1300ft	65	65+	--	---	--/--	EYE CIRC 20 MI DIA STG FDR BNDS ALL QUADS
15	171500Z	22.6N 126.6E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
16	171600Z	22.8N 126.4E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
17	171800Z	23.3N 126.1E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
18	171800Z	23.0N 125.9E	LND RDR	--	--	--	--	---	--/--	NAHA RDR
19	172000Z	23.3N 124.9E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
20	180000Z	23.5N 124.8E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
21	180050Z	23.5N 124.5E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
22	180235Z	23.7N 124.2E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
23	180355Z	23.8N 124.1E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
24	180500Z	23.9N 124.1E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
25	180800Z	24.2N 123.7E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
26	180856Z	24.2N 123.6E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
27	180958Z	24.2N 123.5E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
28	181015Z	24.5N 123.0E	LND RDR	--	--	--	--	---	--/--	BIG LAKE RDR
29	181100Z	24.5N 123.0E	LND RDR	--	--	--	--	---	--/--	BIG LAKE RDR
30	181230Z	24.4N 122.8E	LND RDR	--	--	--	--	---	--/--	BIG LAKE RDR

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
31	181300Z	24.3N 122.8E	LND RDR	--	--	--	--	---	--/--	BIG LAKE RDR
32	181300Z	24.5N 122.9E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
33	181500Z	24.5N 122.2E	LND RDR	--	--	--	--	---	--/--	SHIHMEN RDR
34	181530Z	24.6N 121.9E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
35	181550Z	24.6N 122.1E	54-R-P2	700mb	--	--	--	---	--/--	EYE CIRC 13 MI DIA
36	181600Z	24.5N 121.9E	LND RDR	--	--	--	--	---	--/--	SHIHMEN RDR
37	182100Z	25.7N 121.4E	54-R-P2	700mb	--	--	--	---	--/--	EYE OVAL 15 X 25 MI WALL CLDS WK ALL QUADS
38	182300Z	24.8N 120.0E	LND RDR	--	--	--	--	---	--/--	MAKUNG RDR
39	190354Z	26.5N 122.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 7, BNDS 3

TYPHOON MARY 15 AUG-19 AUG 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
150600Z	19.5N	134.3E	------	------
151200Z	19.5N	133.4E	------	------
151800Z	19.3N	132.8E	------	------
160000Z	19.3N	132.3E	------	------
160600Z	19.7N	131.9E	347-167	------
161200Z	19.9N	131.1E	291-98	------
161800Z	20.3N	130.3E	288-100	------
170000Z	20.8N	129.5E	172-77	------
170600Z	21.4N	128.6E	162-125	328-145
171200Z	22.3N	127.4E	151-150	263-155
171800Z	23.0N	125.9E	186-142	255-122
180000Z	23.5N	124.6E	183-160	167-194
180600Z	24.0N	123.7E	104-80	174-194
181200Z	24.3N	122.7E	088-83	156-237
181800Z	24.6N	121.6E	011-77	197-163
190000Z	24.7N	121.2E	338-85	214-161
190600Z	24.8N	120.7E	332-132	045-83
191200Z	26.4N	119.3E	019-28	050-88

AVERAGE 24 HOUR ERROR 107 MI
AVERAGE 48 HOUR ERROR 154 MI


TYPHOON MARY
15–19 AUGUST 1965
24HR FORECAST POSITS
LEGEND
0---- 24HR FORECAST POSITS
6HR BEST TRACK POSITS
19/12Z
18/00Z
17/00Z
16/00Z
15/06Z
TSINGTAO
SHANGHAI
HONG KONG
OKINAWA
TOKYO
CHICHI JIMA
IWO JIMA
MANILA
SAIGON
SAIPAN
GUAM
YAP
UULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK

TYPHOON OLIVE - 280000Z AUGUST TO 020000Z SEPTEMBER

I. DATA

A. Statistics

1. Number of warnings issued - 21
2. Number of warnings with typhoon intensity - 17
3. Total distance traveled during tropical warning period - 1118 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 936mbs at 300300Z
2. Minimum observed 700mb height - 2582m. at 300300Z
3. Maximum surface wind - 150 kts (From Best Track)
4. Maximum radius of surface circulation - 550 mi

II. DEVELOPMENT

A. Initial impetus - Intensification by increased Southern Hemisphere indraft of mid level low that drifted northeastward from a position north of Koror.

B. Initial surface vortex

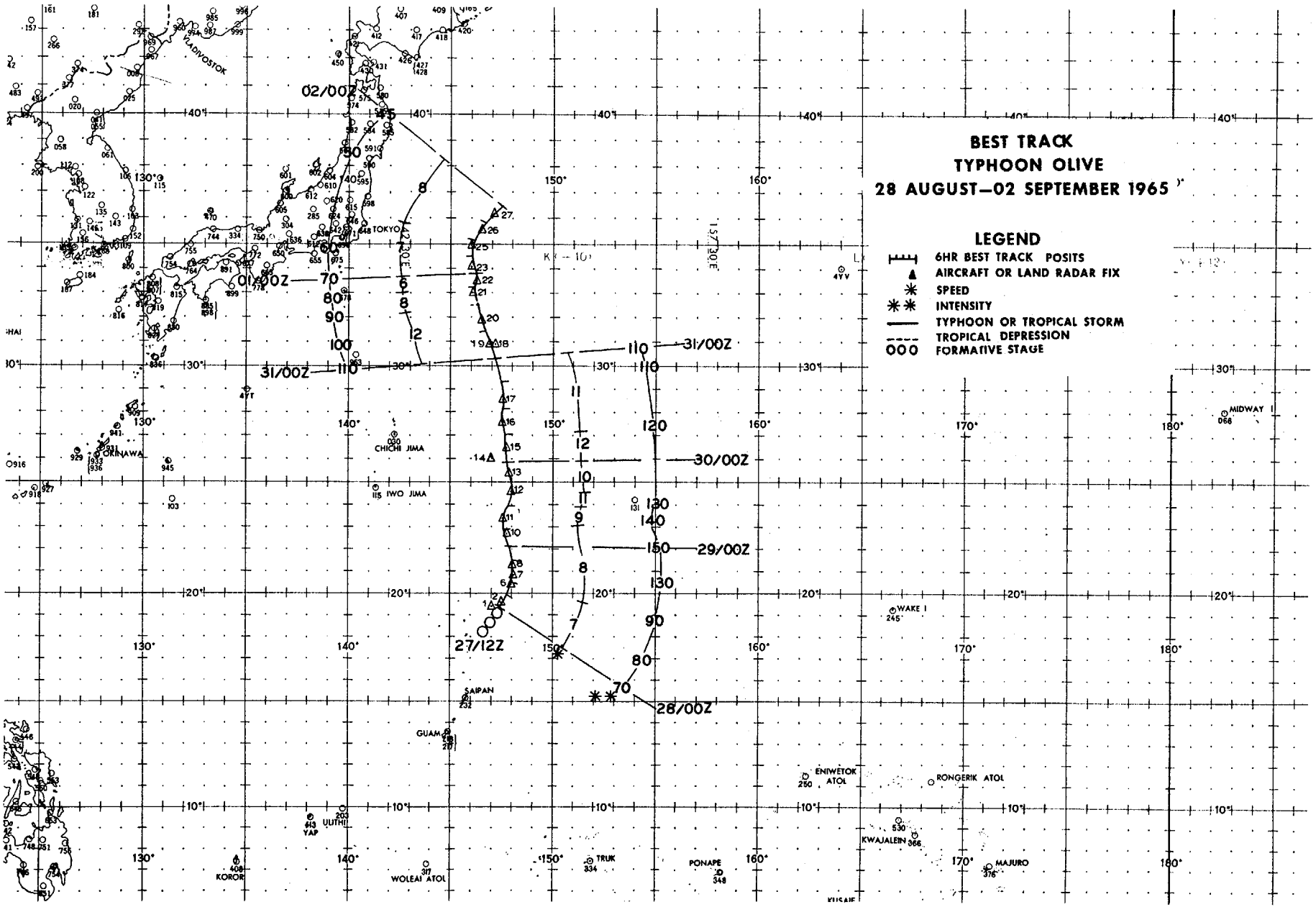
1. Junction vortex at 271200Z
2. Surface pressure less than 1003mbs

C. 200mb flow above surface vortex

1. Initial - northerly
2. Upon reaching typhoon intensity - northerly

III. FINAL DISPOSITION

A. Became extratropical


BEST TRACK
TYPHOON OLIVE
28 AUGUST–02 SEPTEMBER 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
02/00Z
01/00Z
31/00Z
30/00Z
29/00Z
28/00Z
27/12Z
VLADIVOSTOK
TOKYO
ORINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
YAP
UULTHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
WAKE I
MIDWAY I

EYE FIXES TYPHOON OLIVE

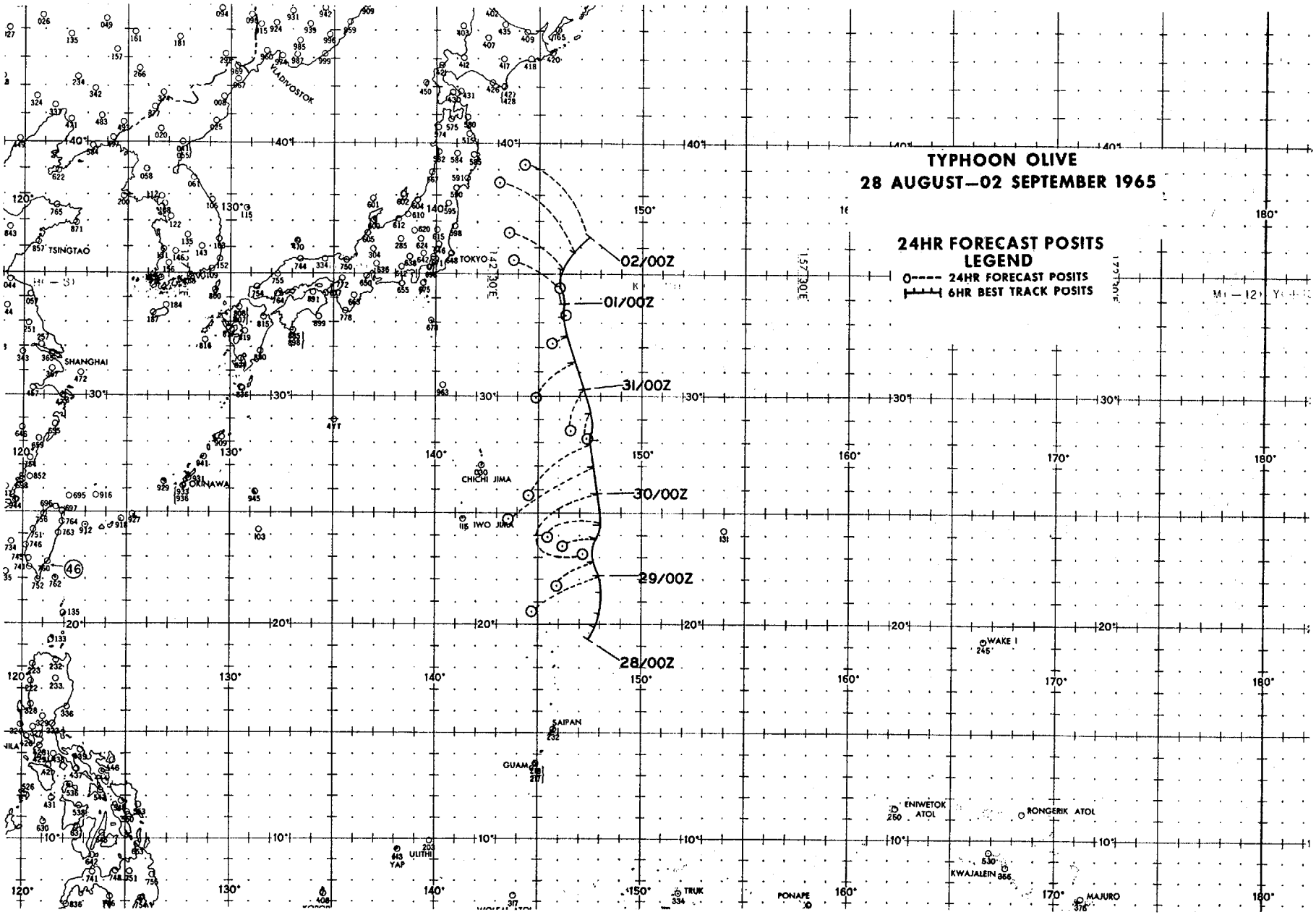
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	272330Z	19.3N 147.0E	VW1-R-P10	1500ft	--	--	---	---	--/--	EYE CIRC 10 MI DIA
2	280033Z	19.4N 147.5E	VW1-P-U	1500ft	--	75	975	---	--/--	
3	280131Z	19.6N 147.5E	VW1-P-U	1500ft	--	--	---	---	--/--	
4	280200Z	19.6N 147.6E	VW1-R-U	1500ft	--	--	---	---	--/--	EYE CLOSED
5	280245Z	19.6N 147.6E	VW1-R-P2	1500ft	--	40	---	---	--/--	EYE CIRC 4 MI DIA
6	280900Z	20.3N 148.0E	VW1-R-P2	1500ft	--	--	---	---	--/--	
7	281325Z	20.7N 148.1E	VW1-R-U	1500ft	--	--	---	---	--/--	
8	281615Z	21.2N 148.0E	VW1-R-P5	1500ft	--	--	---	---	--/--	EYE CIRC 5 MI DIA
9	282115Z	21.3N 148.3E	54-P-P3	700mb	90	120	963	2789	18/--	EYE CIRC 2 MI DIA
10	290300Z	22.6N 147.8E	54-R-P3	700mb	75	170	947	2719	21/--	EYE CIRC 8 MI DIA
11	290900Z	23.3N 147.6E	VW1-R-P15	427m	--	--	---	---	--/--	EYE CIRC 10 MI DIA
12	291445Z	24.5N 148.0E	VW1-R-P10	3277m	--	--	---	---	--/--	EYE CIRC 17 MI DIA
13	292100Z	25.3N 147.9E	54-P-PU	700mb	110	115	951	2679	24/--	EYE CIRC 11 MI DIA
14	292209Z	26.0N 147.0E	TIROS	--	--	--	---	---	--/--	STAGE X, DIA 5, BNDS 4
15	300300Z	26.4N 147.8E	54-P-P1	700mb	80	85	936	2582	20/--	
16	300900Z	27.5N 147.6E	VW1-R-P5	1500ft	--	--	---	---	--/--	EYE CIRC 12 MI DIA

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
17	301445Z	28.5N 147.6E	VW1-R-P10	700mb	--	--	---	---	--/--	EYE CIRC 14 MI DIA
18	310015Z	30.8N 147.2E	54-P-P5	700mb	90	100	953	2694	16/15	EYE CIRC 15 MI DIA
19	310300Z	30.8N 146.9E	54-P-P2	700mb	80	130	953	2694	19/19	EYE CIRC 18 MI DIA
20	310845Z	31.8N 146.5E	VW1-P-P5	1500ft	--	90	960.9	---	23/18	EYE CIRC 13 MI DIA
21	311445Z	33.0N 146.1E	VW1-R-P10	1500ft	70	--	---	---	--/--	EYE DSPTD CNTR 40 MI DIA
22	312050Z	33.4N 146.3E	54-P-P2	700mb	35	40	972	2832	14/12	700 MB CALM AND LOWEST PRES FIXED
23	312213Z	34.0N 146.0E	TIROS	--	--	--	---	---	--/--	STAGE X, BNDS 4, DIA 3
24	010245Z	34.1N 146.1E	54-P-P2	700mb	60	60	---	2844	15/13	700MB WND, TEMP, PRES CNTR FIXED. MANY VISUAL EYES N & E
25	010923Z	34.9N 146.0E	VW1-P-P5	1500ft	41	50	970	---	22/16	EYE FILLED WITH CLOUDS WK FDR BNDS. NEG TEMP RISE IN CNTR
26	011453Z	35.4N 146.5E	VW1-P-P10	700mb	--	--	---	2871	16/12	WK BUT WELL DEFINED FDR BNDS
27	012120Z	36.2N 147.1E	54-P-PU	700mb	39	35	---	2877	13/10	

TYPHOON OLIVE 28 AUG-02 SEPT 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
280000Z	19.3N	147.4E	------	------
280600Z	19.8N	147.8E	------	------
281200Z	20.5N	148.0E	------	------
281800Z	21.4N	148.1E	------	------
290000Z	22.2N	147.9E	242-204	------
290600Z	22.9N	147.6E	233-122	------
291200Z	23.8N	147.8E	253-92	------
291800Z	24.5N	148.0E	248-153	------
300000Z	25.8N	147.8E	192-168	230-364
300600Z	27.0N	147.7E	237-258	221-305
301200Z	28.1N	147.6E	228-217	238-318
301800Z	29.3N	147.4E	185-61	237-362
310000Z	30.3N	147.2E	198-112	205-376
310600Z	31.4N	146.7E	226-127	234-396
311200Z	32.5N	146.3E	236-35	217-405
311800Z	33.3N	146.2E	74-10	090-233
010000Z	33.8N	146.2E	179-36	213-213
010600Z	34.5N	146.0E	299-123	244-209
011200Z	35.2N	146.2E	304-153	337-126
011800Z	35.8N	146.7E	313-237	353-155
020000Z	36.4N	147.5E	317-232	352-227

AVERAGE 24 HOUR ERROR 138 MI
AVERAGE 48 HOUR ERROR 284 MI


TYPHOON OLIVE
28 AUGUST—02 SEPTEMBER 1965
24HR FORECAST POSITS
LEGEND
24HR FORECAST POSITS
6HR BEST TRACK POSITS
02/00Z
01/00Z
31/00Z
30/00Z
29/00Z
28/00Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
WAKE I
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
PONAPE
TRUK
ULITHI
YAP

TYPHOON ROSE - 010600Z TO 051800Z SEPTEMBER

I. DATA

A. Statistics

1. Number of warnings issued - 19
2. Number of warnings with typhoon intensity - 16
3. Total distance traveled during tropical warning period - 1232 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 968mbs at 041012Z
2. Minimum observed 700mb height - 2981m. at 020915Z
3. Maximum surface wind - 100 kts (From Best Track)
4. Maximum radius of surface circulation - 400 mi

II. DEVELOPMENT

A. Initial impetus - Divergent flow at 200mb over strong indraft in low level feeding Typhoon OLIVE to the northeast. Cyclonic turning developed in low level flow.

B. Initial surface vortex

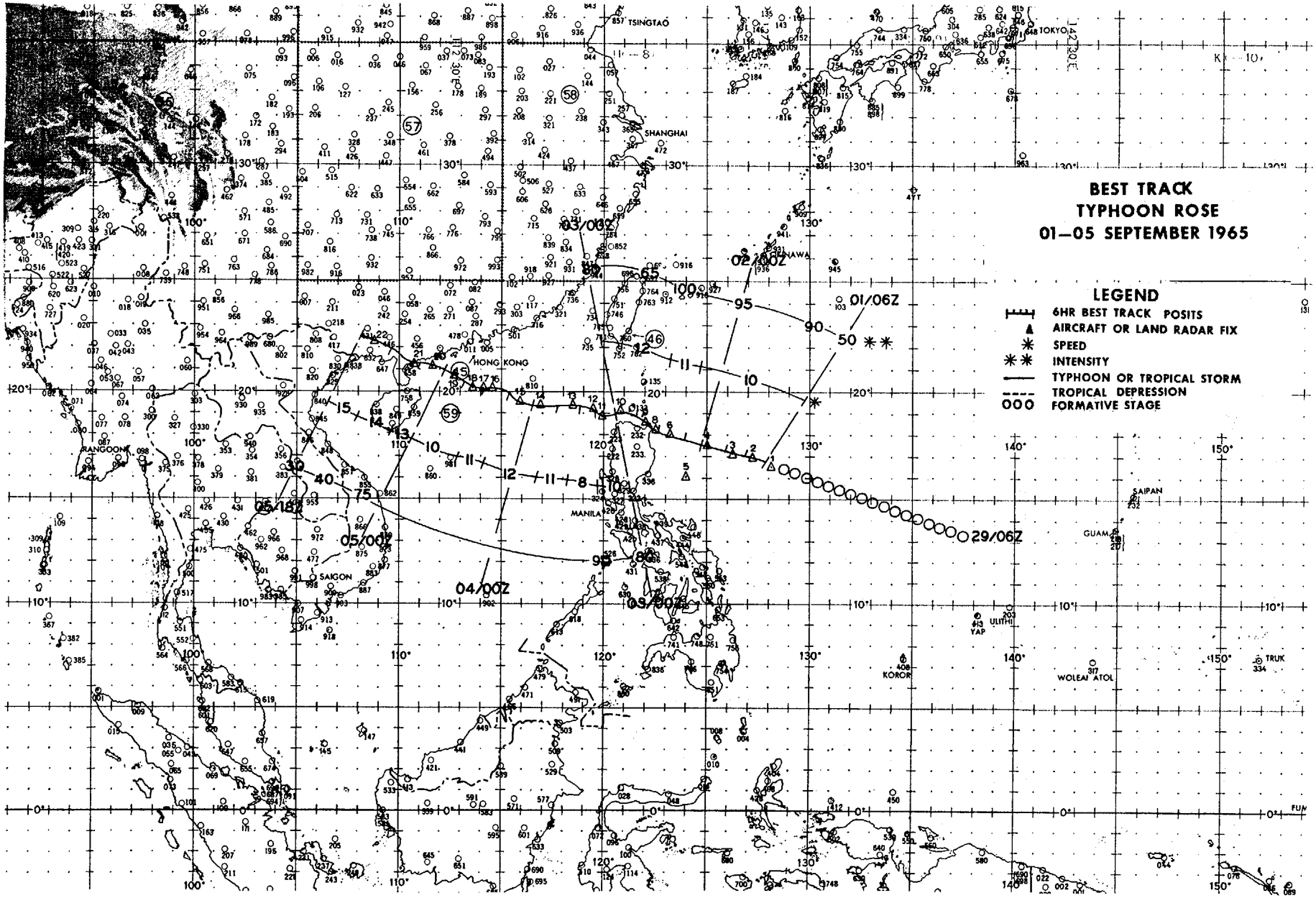
1. Junction vortex at 290600Z
2. Surface pressure less than 1004mbs

C. 200mb flow above surface vortex

1. Initial - northeasterly
2. Upon reaching typhoon intensity - north-northeasterly

III. FINAL DISPOSITION

A. Dissipated over land


BEST TRACK
TYPHOON ROSE
01–05 SEPTEMBER 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
TSINGTAO
TOKYO
SHANGHAI
HONG KONG
RANGOON
MANILA
SAIGON
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
01/06Z
02/00Z
03/00Z
04/00Z
05/00Z
29/06Z

EYE FIXES TYPHOON ROSE

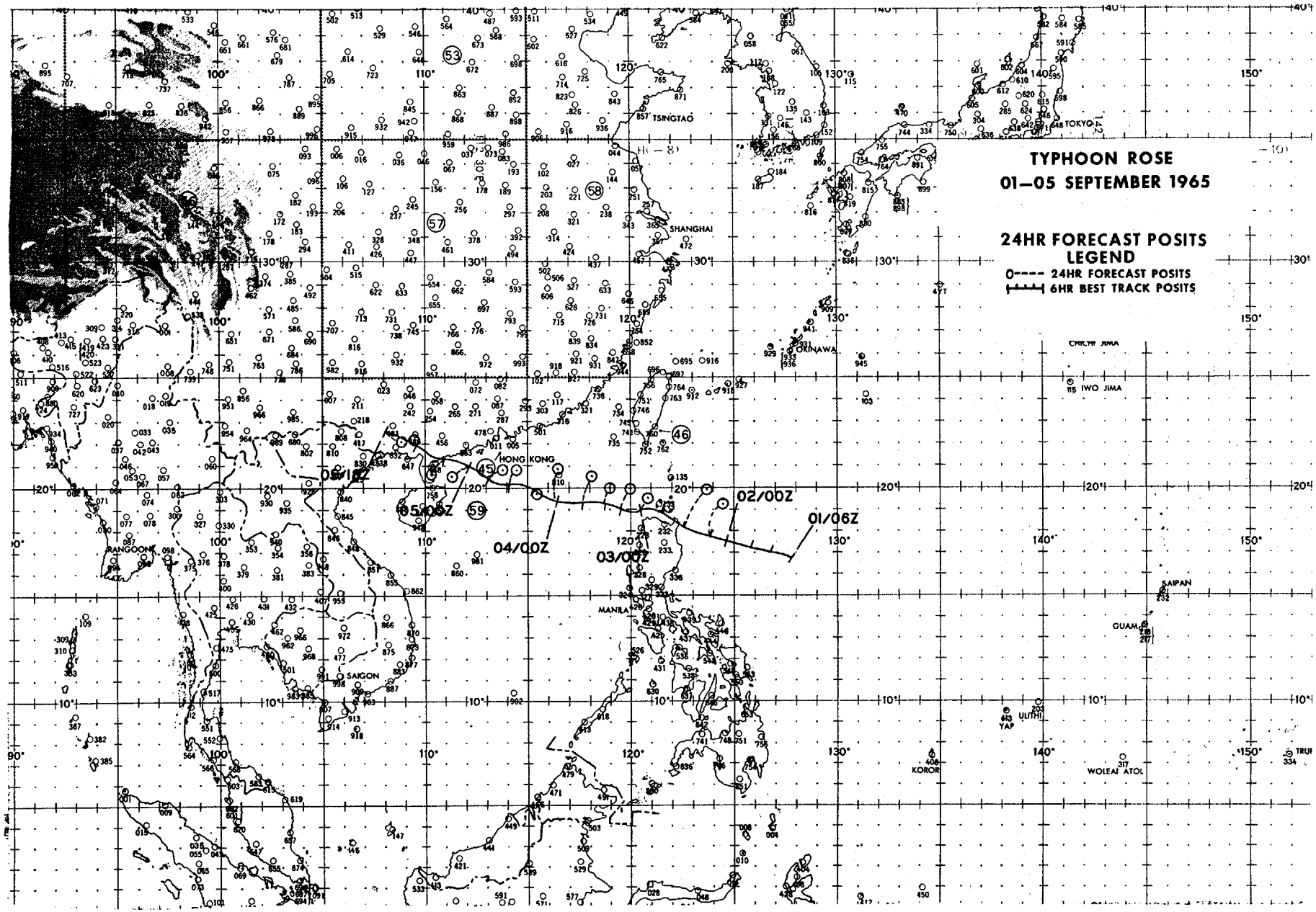
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	010350Z	16.5N 128.1E	54-P-P3	1500ft	40	50	990	---	24/--	EYE CIRC 20 MI DIA. FDR BNDS ALL QUADS
2	010912Z	16.9N 127.2E	VW1-P-P5	1500ft	80	90	986	---	26/23	EYE CIRC 30 MI DIA. EYE OPEN NE SEMI
3	011445Z	17.1N 126.2E	VW1-R-P10	700mb	45	--	---	---	--/--	CNTR CIRC 30 MI DIA. CNTR A VORTEX IN E SIDE MASS HVY WX
4	012258Z	17.5N 125.0E	TIROS	--	--	--	---	---	--/--	CNTR OF BRIGHT CI AREA
5	020244Z	16.0N 124.0E	TIROS	--	--	--	---	---	--/--	STAGE D, BNDS 1, DIA 5
6	020915Z	18.0N 123.2E	56-P-P3	700mb	80	100	984	2981	14/10	EYE CIRC 20 MI DIA
7	020945Z	17.9N 123.1E	56-P-P3	700mb	80	100	---	---	--/--	EYE CIRC 20 MI DIA
8	021442Z	18.2N 122.4E	VW1-R-10	700mb	--	--	---	---	--/--	
9	021621Z	18.6N 122.0E	VW1-R-F2	760mb	30	--	---	---	--/--	
10	022200Z	19.1N 120.8E	56-P-P1	700mb	25	40	993	3030	13/09	EYE CIRC 15 MI DIA
11	030300Z	18.8N 119.9E	56-P-P1	700mb	35	90	989	3018	14/08	RDR EYE CIRC 18 MI DIA
12	030800Z	19.2N 119.4E	56-P-P1	700mb	35	65	988	2999	15/10	RDR EYE CIRC 24 MI DIA SFC CALM 3 MI DIA
13	031445Z	19.3N 118.4E	VW1-R-P10	700mb	--	--	---	---	--/--	EYE CIRC 9 MI DIA. HVY FDR BNDS
14	032100Z	19.3N 116.9E	VW1-R-P5	700mb	--	--	---	---	--/--	EYE CIRC 9 MI DIA. STM GREATLY INTENSIFIED

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
15	040245Z	19.6N 115.9E	VW1-P-P10	1500ft	--	80	977	---	25/20	EYE CIRC 10 MI DIA
16	041012Z	20.2N 114.5E	VW1-P-P10	938mb	--	90	968	---	27/25	EYE CIRC 18 MI DIA
17	041235Z	20.2N 114.1E	VW1-P-PU	1500ft	--	--	---	---	--/--	THIS RDR POSIT. WND EYE 10 MI N
18	041459Z	20.2N 113.6E	VW1-P-P5	723mb	65	--	---	---	24/--	EYE CIRC 18 MI DIA
19	042100Z	20.7N 112.6E	VW1-R-P5	335m	--	--	---	---	26/24	EYE CIRC 7 MI DIA
20	050255Z	21.1N 111.7E	VW1-R-P10	335m	52	--	---	---	--/--	EYE CIRC 13 MI DIA
21	050700Z	21.3N 110.7E	VW1-R-U	700mb	--	--	---	---	--/--	ROSE ASHORE
22	051515Z	22.3N 108.7E	VW1-R-U	--	--	--	---	---	--/--	CNTR BADLY DISORGANIZED. 3 POORLY DEFINED FDR BNDS
23	052120Z	-- --	VW1-R-U	--	--	--	---	---	--/--	ROSE DSPTD IN MOUNTAINS NW GULF OF TONKIN. NEG BNDS. NEG CNTR

TYPHOON ROSE 01 SEPT-05 SEPT 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
010600Z	15.7N	127.7E	------	------
011200Z	16.2N	126.8E	------	------
011800Z	16.6N	125.9E	------	------
020000Z	17.2N	124.9E	------	------
020600Z	17.7N	123.9E	019-98	------
021200Z	18.1N	122.6E	027-123	------
021800Z	18.7N	121.6E	023-20	------
030000Z	18.9N	120.5E	034-42	------
030600Z	19.0N	119.6E	026-54	030-185
031200Z	19.4N	118.8E	014-39	025-200
031800Z	19.3N	117.7E	019-75	017-106
040000Z	19.3N	116.5E	357-90	020-144
040600Z	19.9N	115.3E	130-08	024-155
041200Z	20.2N	114.2E	038-38	030-150
041800Z	20.4N	113.2E	059-44	029-169
050000Z	20.9N	112.2E	245-62	006-84
050600Z	21.3N	111.0E	223-59	138-45
051200Z	21.8N	109.6E	340-23	087-59
051800Z	22.5N	108.1N	118-51	113-100

AVERAGE 24 HOUR ERROR 55 MI
AVERAGE 48 HOUR ERROR 127 MI


TYPHOON ROSE
01–05 SEPTEMBER 1965
24HR FORECAST POSITS
LEGEND
0---- 24HR FORECAST POSITS
6HR BEST TRACK POSITS
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
IWO JIMA
HONG KONG
RANGOON
SAIGON
MANILA
SAIPAN
GUAM
YAP
KOROR
WOLEAI ATOL
05/18Z
05/06Z
04/00Z
03/00Z
02/00Z
01/06Z

TYPHOON SHIRLEY - 040000Z TO 101800Z SEPTEMBER

I. DATA

A. Statistics

1. Number of warnings issued - 28
2. Number of warnings with typhoon intensity - 19
3. Total distance traveled during tropical warning period - 2255 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 936mbs at 082100Z and 092110Z
2. Minimum observed 700mb height - 2542m. at 082100Z
3. Maximum surface wind - 130 kts (From Best Track)
4. Maximum radius of surface circulation - 625 mi

II. DEVELOPMENT

A. Initial impetus - Divergence aloft and surge of low and mid level inflow from Southern Hemisphere

B. Initial surface vortex

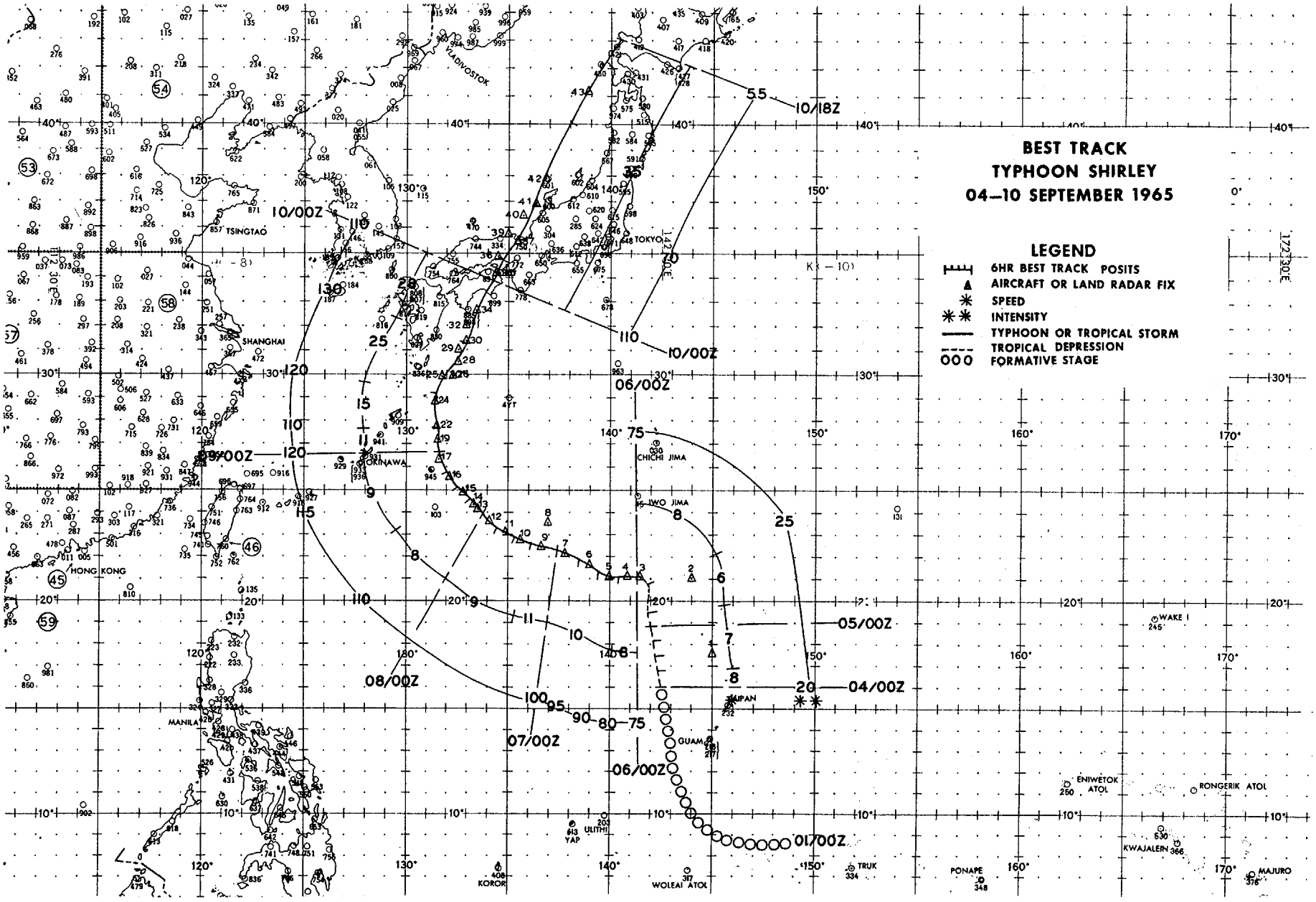
1. Junction vortex at 010000Z
2. Surface pressure less than 1007mbs

C. 200mb flow above surface vortex

1. Initial - northeasterly divergent flow
2. Upon reaching typhoon intensity - southerly flow

III. FINAL DISPOSITION

A. Became extratropical


BEST TRACK
TYPHOON SHIRLEY
04—10 SEPTEMBER 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
HONG KONG
MANILA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
WAKE I
10/18Z
10/00Z
06/00Z
05/00Z
04/00Z
01/00Z
06/00Z
07/00Z
08/00Z
09/00Z

EYE FIXES TYPHOON SHIRLEY

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	040146Z	17.5N 145.0E	TIROS X	--	--	--	--	---	--/--	
2	050115Z	21.0N 144.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 4, BNDS 2 MOD TO STG EXTERNAL BNDG TO NW
3	052200Z	21.1N 141.5E	VW1-P-P10	305M	--	80	981	---	28/24	EYE CIRC 25 MI DIA
4	060245Z	21.2N 140.8E	VW1-R-P15	957mb	--	45	--	---	--/--	EYE CIRC 30 MI DIA
5	060900Z	21.1N 140.0E	54-P-P5	700mb	60	85	978	2920	20/--	EYE CIRC 18 MI DIA
6	061445Z	21.6N 139.0E	VW1-P-P5	723mb	50	60	--	2811	18/15	EYE ELIP 25 X 18 E-W
7	062100Z	22.1N 137.8E	56-P-P10	700mb	75	100	970	---	17/15	EYE CIRC 20 MI DIA
8	070156Z	23.5N 137.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 4, BNDS 3
9	070330Z	22.4N 136.6E	54-P-P3	700mb	60	100	960	2786	18/--	OVAL 10 X 20
10	071000Z	22.7N 135.6E	VW1-R-P5	320M	--	--	--	---	--/--	EYE CIRC 25 MI DIA
11	071500Z	23.1N 134.9E	VW1-P-P5	694mb	--	--	--	2786	16/13	EYE ELIP 25 X 20 NNE-SSW
12	072100Z	23.6N 134.1E	54-P-P5	700mb	--	100	951	2694	17/--	EYE CIRC 10 MI DIA
13	080120Z	24.1N 133.6E	54-P-U	700mb	--	--	--	2694	--/--	
14	080300Z	24.3N 133.4E	54-P-P5	700mb	80	130	949	2691	17/--	EYE CIRC 10 MI DIA
15	080856Z	24.8N 132.8E	VW1-R-P4	305M	60	80	--	---	--/--	EYE CIRC 8 MI DIA
16	081445Z	25.5N 132.2E	VW1-R-P5	1450ft	--	--	--	---	--/--	EYE CIRC 9 MI DIA

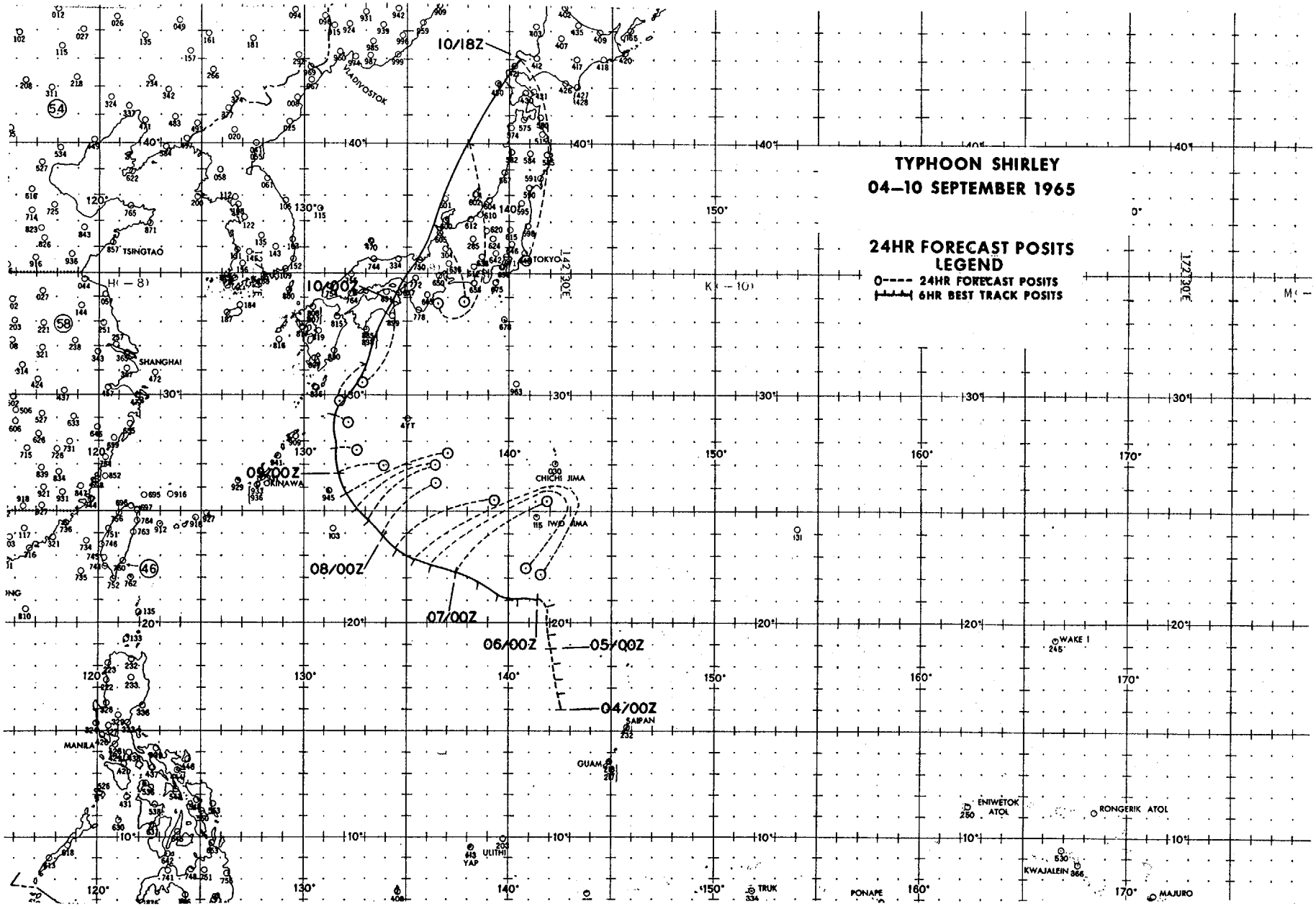
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
17	082100Z	26.3N 131.7E	56-P-P3	700mb	85	120	936	2542	17/13	EYE CIRC 15 MI DIA NO SFC CALM EYE VERTICAL
18	090000Z	26.2N 131.5E	LND RDR	--	--	--	--	---	--/--	STA 47909
19	090200Z	27.2N 131.6E	56-P-P2	700mb	75	100	944	2612	19/14	EYE CIRC 25 MI DIA NO RDR EYE STM APPRS TO BE BRKG UP
20	090300Z	27.2N 131.6E	LND RDR	--	--	--	--	---	--/--	STA 47909
21	090445Z	27.6N 131.5E	LND RDR	--	--	--	--	---	--/--	AMAMI SHIMA
22	090600Z	27.7N 131.6E	LND RDR	--	--	--	--	---	--/--	STA 47909
23	090900Z	28.7N 131.6E	LND RDR	--	--	--	--	---	--/--	STA 47909
24	090915Z	28.8N 131.4E	VW1-R-F5	850mb	--	75	--	---	--/--	EYE CIRC 10 MI DIA
25	091200Z	29.9N 131.8E	LND RDR	--	--	--	--	---	--/--	STA 47909
26	091400Z	29.9N 132.2E	LND RDR	--	--	--	--	---	--/--	STA 47808
27	091450Z	30.2N 132.3E	LND RDR	--	--	--	--	---	--/--	STA 47808
28	091554Z	30.5N 132.6E	VW1-R-P5	700mb	--	--	--	---	--/--	EYE CIRC 25 MI DIA WND EYE BY HOLE IN SEA RETURN CONFIRMS RDR EYE
29	091600Z	31.0N 132.7E	LND RDR	--	--	--	--	---	--/--	KUSUGA
30	091800Z	31.3N 133.0E	LND RDR	--	--	--	--	---	--/--	STA 47869
31	091900Z	32.1N 133.3E	LND RDR	--	--	--	--	---	--/--	STA 47869
32	092000Z	32.0N 133.0E	LND RDR	--	--	--	--	---	--/--	KUSUGA

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
33	092100Z	32.4N 133.3E	LND RDR	--	--	--	--	---	--/--	KUSUGA
34	092110Z	32.6N 133.4E	54-P-P5	700mb	110	150	936	2557	18/--	EYE CIRC 50 MI DIA RDR EYE 160/10 FM FIX NO SFC CALM
35	100030Z	34.2N 134.4E	54-U-U	--	--	--	--	---	--/--	
36	100200Z	34.8N 134.5E	54-R-U5	500mb	--	--	--	---	--/--	
37	100250Z	35.5N 135.5E	54-P-L15	500mb	80	100	--	---	08/--	500MB HT 5550M CIRC BRKG UP RAPIDLY LAST 4 HRS
38	100300Z	35.4N 135.4E	LND RDR	--	--	--	--	---	--/--	FUJI RDR
39	100300Z	35.7N 135.0E	LND RDR	--	--	--	--	---	--/--	STA 47636
40	100400Z	36.4N 135.7E	LND RDR	--	--	--	--	---	--/--	STA 47636
41	100500Z	36.9N 136.3E	LND RDR	--	--	--	--	---	--/--	STA 47636
42	100900Z	37.9N 136.8E	VW1-P-P2	700mb	--	75	--	2847	18/11	EYE CIRC 20 MI DIA WND EYE 5 MI DIA SAME POSIT
43	101500Z	41.2N 138.9E	VW1-P-F2	700mb	--	60	--	2862	15/11	PRES POS, RDR POOR SFC WND OBSERVED BY MOON

TYPHOON SHIRLEY 04 SEPT-10 SEPT 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
040000Z	16.0N	142.5E	------	------
040600Z	16.7N	142.4E	------	------
041200Z	17.4N	142.3E	------	------
041800Z	18.2N	142.2E	------	------
050000Z	18.8N	142.1E	------	------
050600Z	19.5N	142.0E	------	------
051200Z	20.1N	141.9E	------	------
051800Z	20.7N	141.9E	------	------
060000Z	21.2N	141.3E	------	------
060600Z	21.1N	140.4E	------	------
061200Z	21.3N	139.4E	------	------
061800Z	21.8N	138.5E	------	------
070000Z	22.3N	137.5E	052-310	------
070600Z	22.5N	136.2E	090-252	------
071200Z	22.8N	135.3E	096-343	------
071800Z	23.3N	134.5E	065-295	------
080000Z	23.9N	133.8E	045-195	065-720
080600Z	24.6N	133.2E	049-227	082-483
081200Z	25.1N	132.6E	060-232	085-510
081800Z	25.7N	132.0E	068-291	074-654
090000Z	26.6N	131.6E	082-125	069-630
090600Z	27.7N	131.5E	092-50	068-848
091200Z	29.2N	131.5E	127-41	073-814
091800Z	31.3N	132.9E	218-110	080-743
100000Z	33.8N	134.3E	200-208	112-383
100600Z	36.9N	136.3E	159-194	175-325
101200Z	40.1N	138.1E	192-376	178-428
101800Z	43.1N	140.4E	178-454	187-530

AVERAGE 24 HOUR ERROR 231 MI
AVERAGE 48 HOUR ERROR 589 MI


TYPHOON SHIRLEY
04–10 SEPTEMBER 1965
24HR FORECAST POSITS
LEGEND
0---- 24HR FORECAST POSITS
6HR BEST TRACK POSITS
10/18Z
10/00Z
09/00Z
08/00Z
07/00Z
06/00Z
05/00Z
04/00Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
MANILA
GUAM
SAIPAN
WAKE I
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
PONAPE
TRUK
ULITHI
YAP
142°30'E
122°30'E

TYPHOON TRIX - 101200Z TO 181200Z SEPTEMBER

I. DATA

A. Statistics

1. Number of warnings issued - 33
2. Number of warnings with typhoon intensity - 27
3. Total distance traveled during tropical warning period - 2497 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 930mbs at 150200Z
2. Minimum observed 700mb height - 2508m. at 142100Z
3. Maximum surface wind - 130 kts (From Best Track)
4. Maximum radius of surface circulation - 850 mi

II. DEVELOPMENT

A. Initial impetus - Divergence aloft and surge of low and mid level inflow from Southern Hemisphere

B. Initial surface vortex

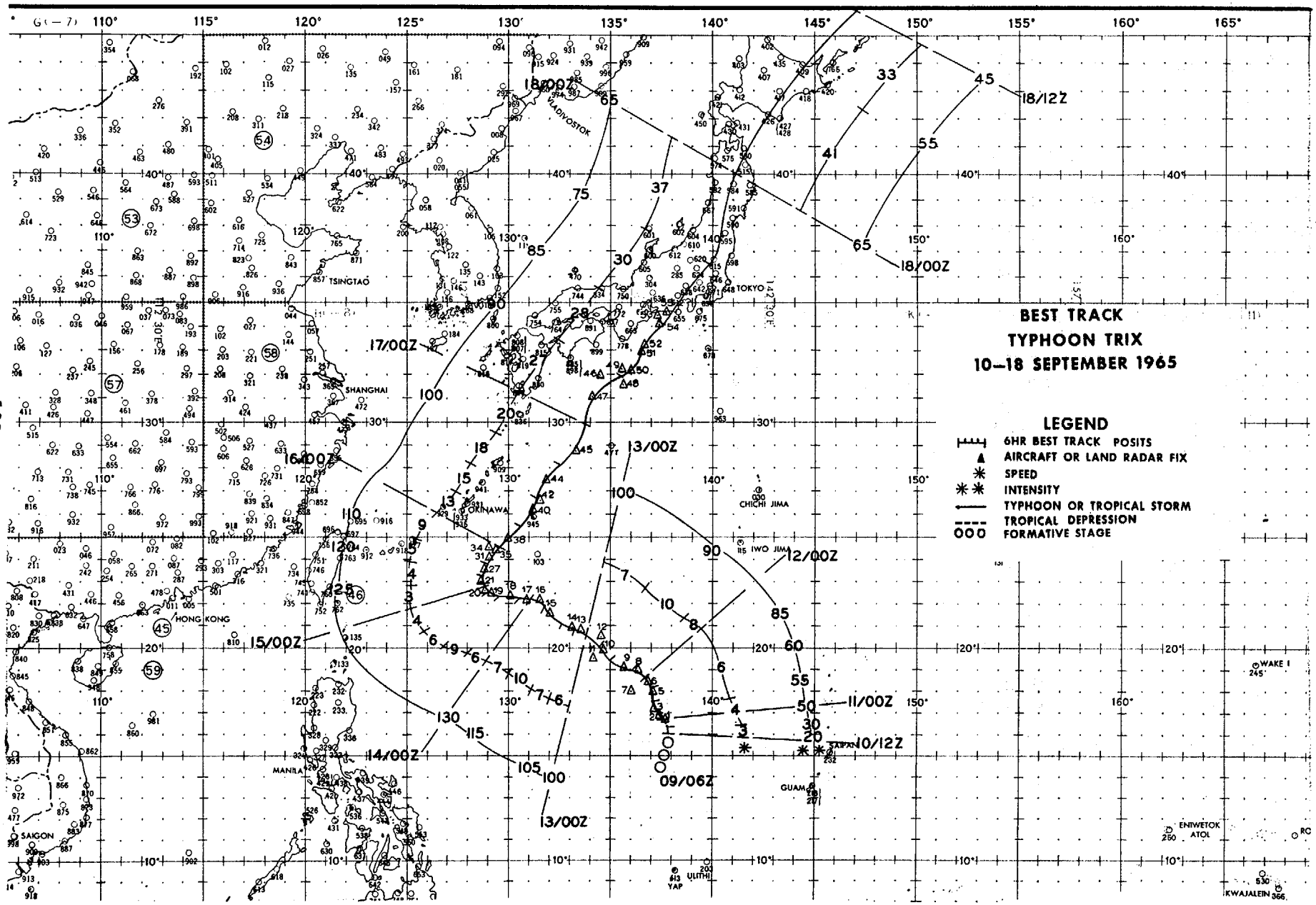
1. Junction vortex at 090600Z
2. Surface pressure less than 1005mbs

C. 200mb flow above surface vortex

1. Initial - northerly
2. Upon reaching typhoon intensity - near center of anticyclonic outdraft

III. FINAL DISPOSITION

A. Became extratropical


BEST TRACK
TYPHOON TRIX
10–18 SEPTEMBER 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIGON
GUAM
WAKE I
ENIWETOK ATOL
KWAJALEIN
ULITHI
YAP
18/00Z
18/12Z
17/00Z
16/00Z
15/00Z
14/00Z
13/00Z
12/00Z
11/00Z
10/12Z
09/06Z

EYE FIXES TYPHOON TRIX

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	102230Z	16.7N 137.7E	54-P-P3	700mb	--	45	986	2978	10/--	CNTR APPRS COLDER THAN ENVIRONMENT
2	110300Z	16.8N 137.3E	54-P-P5	700mb	42	55	980	2957	17/--	EYE CIRC 15 MI DIA WELL DEFINED
3	110900Z	17.2N 137.1E	VW1-P-P5	944mb	35	40	974	---	26/19	EYE CIRC 18 MI DIA CLASSIC FDR BNDS DVLPG
4	111240Z	17.3N 137.2E	VW1-R-U	700mb	--	--	--	---	--/--	
5	111440Z	17.9N 137.1E	VW1-P-P5	723mb	--	55	--	2954	15/09	EYE CIRC 20 MI DIA FDR BNDS TO 300 MI SW QUAD
6	1 250Z	18.4N 136.8E	54-P-P1	700mb	--	85	960	2859	16/--	EYE CIRC 20 MI DIA CLASSIC FDR BNDS ALL QUADS
7	120035Z	18.0N 136.0E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 7, BNDS 3
8	120330Z	19.0N 136.3E	54-P-P1	700mb	--	85	944	2844	17/--	EYE CIRC 20 MI DIA
9	120900Z	19.1N 135.6E	VW1-R-P5	1000 ft	--	60	--	---	--/--	EYE CIRC 10 MI DIA TOPS ABOVE 40,000 FT
10	121445Z	19.9N 134.6E	VW1-R-P5	1200 ft	--	--	--	---	--/--	EYE CIRC 5 MI DIA
11	122100Z	19.6N 134.1E	54-P-P3	700mb	35	65	969	2844	15/--	
12	130058Z	20.5N 134.5E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 5, BNDS 3

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
13	130300Z	20.8N 133.5E	54-P-P3	700mb	55	70	959	2752	17/--	EYE CIRC 5 MI DIA STM WKR THAN AT LAST FIX
14	130844Z	20.9N 133.1E	VW1-R-P5	870 ft	--	75	--	---	--/--	EYE CIRC 8 MI DIA CON-CENTRIC OUTER EYE 65 MI DIA
15	131445Z	21.5N 132.0E	VW1-R-P10	1450 ft	55	--	--	---	--/--	EYE CIRC 10 MI DIA CON-CENTRIC OUTER EYE 50 MI DIA
16	132100Z	22.2N 131.5E	54-P-P2	700mb	--	40	945	2634	21/--	EYE CIRC 50 MI DIA
17	140200Z	22.2N 130.9E	54-P-P2	700mb	95	130	950	2670	20/--	RDR EYE CIRC 50 MI DIA WND EYE 20 MI DIA
18	140845Z	22.3N 130.1E	VW1-R-P10	955ft	80	95	--	---	--/--	RDR EYE CIRC 50 MI DIA
19	141445Z	22.4N 129.1E	VW1-R-P10	4190ft	--	--	--	---	--/--	EYE CIRC 50 MI DIA
20	142100Z	22.6N 128.8E	54-P-P3	700mb	100	80	933	2508	21/--	EYE CIRC 60 MI DIA FDR BNDS ALL QUADS
21	150200Z	23.0N 128.7E	54-P-P3	700mb	100	130	930	2508	20/--	EYE CIRC 60 MI DIA WALL CLD ALL QUAD 10 MI THICK
22	150430Z	23.1N 128.5E	LND RDR	--	--	--	--	---	--/--	
23	150800Z	23.1N 128.5E	LND RDR	--	--	--	--	---	--/--	STM STATIONARY
24	150900Z	23.1N 128.8E	VW1-R-P5	1000ft	--	80	--	---	--/--	
25	150900Z	23.5N 128.6E	LND RDR	--	--	--	--	---	--/--	
26	151400Z	23.8N 128.8E	LND RDR	--	--	--	--	---	--/--	NAHA RDR STM STATIONARY EYE 81 MI DIA
27	151500Z	23.6N 128.8E	VW1-R-P2	700mb	75	--	--	---	--/--	EYE ELIP N-S

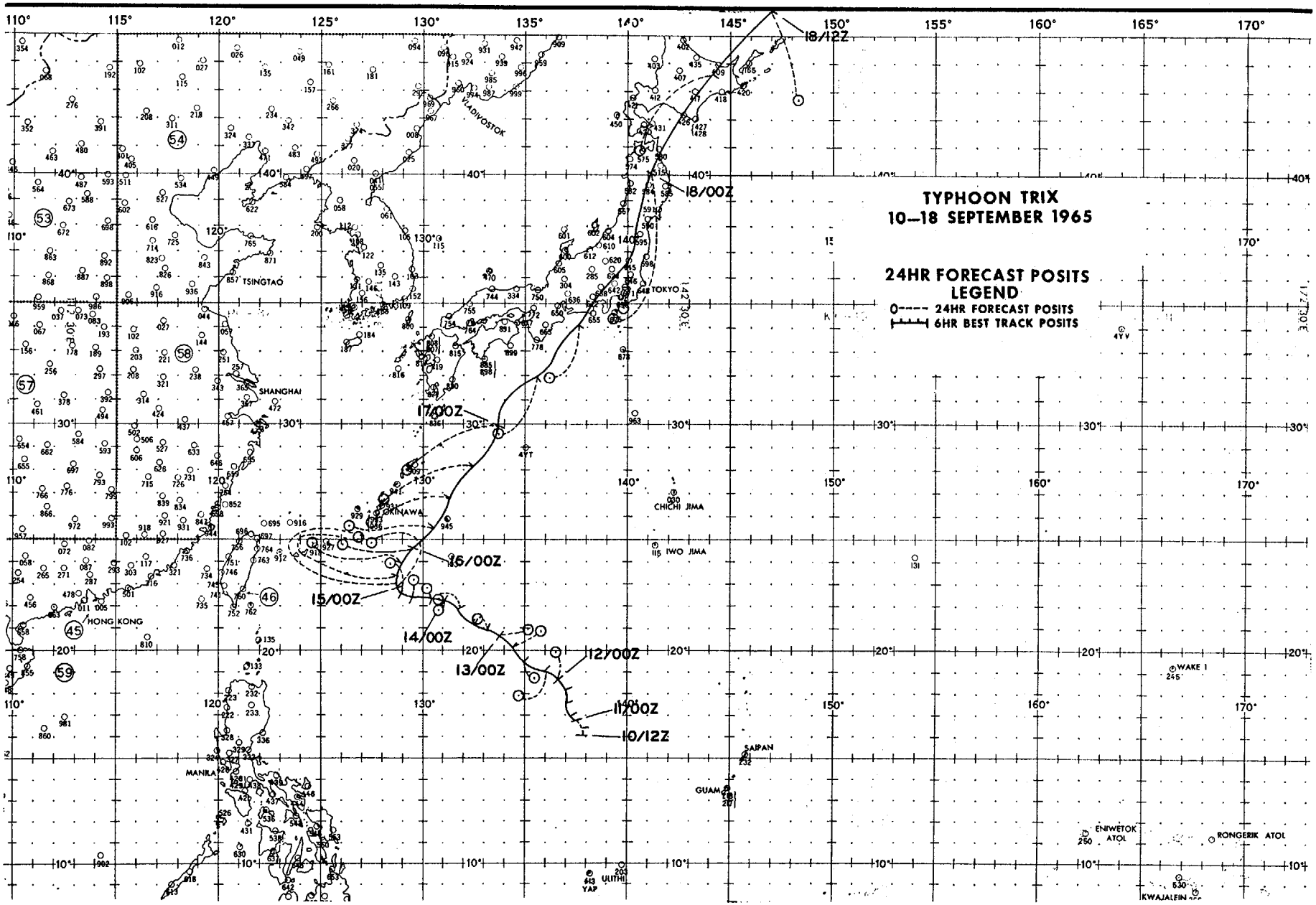
FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
28	151500Z	24.1N 128.1E	LND RDR	--	--	--	--	---	--/--	MIYAKO JIMA RDR
29	151615Z	23.8N 129.0E	LND RDR	--	--	--	--	---	--/--	NAHA RDR EYE 74 MI DIA
30	152040Z	24.3N 129.0E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
31	152100Z	24.1N 129.0E	54-P-P5	700mb	65	--	947	2637	17/--	EYE CIRC 20 MI DIA NO WALL CLDS SOLID MASS CLDS 80 MI DIA
32	152100Z	24.4N 129.2E	LND RDR	--	--	--	--	---	--/--	NAHA RDR STM MVG 030 DEG 08 KTS
33	152300Z	24.5N 129.5E	LND RDR	--	--	--	--	---	--/--	NAHA RDR
34	160035Z	24.5N 129.0E	TIROS	--	--	--	--	---	--/--	STAGE X, BNDS 4
35	160039Z	24.4N 129.3E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
36	160143Z	24.8N 129.5E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
37	160228Z	25.2N 129.8E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 6, BNDS 4 WELL DVLPD EYE VSBL
38	160300Z	24.9N 129.9E	54-P-P3	700mb	80	70	950	2643	17/--	EYE CIRC 20 MI DIA FDR BNDS ALL QUADS
39	160945Z	26.3N 131.3E	LND RDR	--	--	--	--	---	--/--	NAHA RDR
40	161000Z	26.2N 131.2E	VW1-P-P2	1300ft	78	90	946	---	25/11	EYE CIRC 80 MI DIA
41	161200Z	26.7N 131.4E	VW1-R-U	1500ft	--	--	--	---	--/--	EYE OPEN SW QUAD
42	161210Z	26.5N 131.5E	LND RDR	--	--	--	--	---	--/--	KADENA RDR
43	161300Z	26.7N 131.7E	LND RDR	--	--	--	--	---	--/--	NAHA RDR

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
44	161430Z	27.4N 131.8E	VW1-P-P3	1300ft	90	--	949	---	25/20	EYE CIRC 140 MI DIA. FDR BNDS ALL QUADS XCP SW
45	162100Z	28.7N 133.3E	54-P-P3	700mb	65	--	951	2685	17/--	EYE CIRC 100 MI DIA. EYE FILLED WITH CLDS
46	170200Z	32.0N 134.5E	TIROS	--	--	--	--	---	--/--	STAGE X, DIA 4.5, BNDS 3
47	170300Z	31.1N 134.1E	54-P-P3	700mb	100	130	956	2722	17/--	EYE CIRC 100 MI DIA
48	170600Z	31.6N 135.6E	LND RDR	--	--	--	--	---	--/--	FUJI RDR
49	170630Z	32.3N 135.5E	LND RDR	--	--	--	--	---	--/--	
50	170700Z	32.2N 136.0E	LND RDR	--	--	--	--	---	--/--	FUJI RDR
51	170830Z	33.0N 136.4E	VW1-R-P10	1100ft	65	60	979	---	21/18	EYE CIRC 12 MI DIA
52	170900Z	33.3N 136.6E	LND RDR	--	--	--	--	---	--/--	FUJI RDR
53	171200Z	34.4N 137.3E	LND RDR	--	--	--	--	---	--/--	FUJI RDR
54	171200Z	34.1N 137.3E	LND RDR	--	--	--	--	---	--/--	NAGOYA RDR
55	171300Z	34.6N 137.7E	LND RDR	--	--	--	--	---	--/--	FUJI RDR

TYPHOON TRIX 10 SEPT-18 SEPT 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
101200Z	16.0N	137.9E	------	------
101800Z	16.4N	137.8E	------	------
110000Z	16.7N	137.4E	------	------
110600Z	16.9N	137.2E	------	------
111200Z	17.6N	137.2E	------	------
111800Z	18.2N	137.0E	------	------
120000Z	18.6N	136.6E	352-74	------
120600Z	19.0N	136.0E	226-100	------
121200Z	19.4N	135.0E	151-44	------
121800Z	20.1N	134.4E	063-90	------
130000Z	20.6N	133.8E	079-79	032-161
130600Z	20.8N	133.2E	325-40	232-90
131200Z	21.1N	132.5E	341-10	128-100
131800Z	21.8N	131.7E	294-55	021-87
140000Z	22.2N	136.0E	221-24	050-70
140600Z	22.2N	130.4E	346-40	312-145
141200Z	22.3N	129.5E	007-55	335-77
141800Z	22.4N	128.9E	341-95	326-160
150000Z	22.7N	128.5E	333-138	319-114
150600Z	23.0N	128.7E	325-157	323-115
151200Z	23.3N	128.7E	314-145	314-197
151800Z	23.8N	128.9E	285-247	312-265
160000Z	24.5N	129.5E	275-180	318-340
160600Z	25.4N	130.5E	273-224	310-373
161200Z	26.7N	131.3E	254-216	290-355
161800Z	28.1N	132.5E	251-250	271-488
170000Z	29.9N	133.7E	244-256	255-497
170600Z	31.9N	135.5E	215-164	253-545
171200Z	34.2N	137.4E	203-153	242-560
171800Z	36.5N	139.8E	180-97	238-615
180000Z	40.1N	141.2E	194-350	230-528
180600Z	43.6N	144.2E	224-233	200-537
181200Z	45.9N	147.1E	165-205	191-524

AVERAGE 24 HOUR ERROR 138 MI
AVERAGE 48 HOUR ERROR 302 MI


TYPHOON TRIX
10–18 SEPTEMBER 1965
24HR FORECAST POSITS
LEGEND
0---- 24HR FORECAST POSITS
6HR BEST TRACK POSITS
18/12Z
18/00Z
17/00Z
16/00Z
15/00Z
14/00Z
13/00Z
12/00Z
11/00Z
10/12Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIPAN
GUAM
WAKE I
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
ULITHI
YAP

TYPHOON VIRGINIA - 130600Z TO 170000Z SEPTEMBER

I. DATA

A. Statistics

1. Number of warnings issued - 16
2. Number of warnings with typhoon intensity - 4
3. Total distance traveled during tropical warning period - 1858 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 980mbs at 160930Z
2. Minimum observed 700mb height - 2999m. at 152115Z
3. Maximum surface wind - 65 kts (From Best Track)
4. Maximum radius of surface circulation - 300 mi

II. DEVELOPMENT

A. Initial impetus - Middle level low drifted northwest under a small rapidly developing high level anticyclone. System developed on low level inflow diverted from Typhoon TRIX.

B. Initial surface vortex

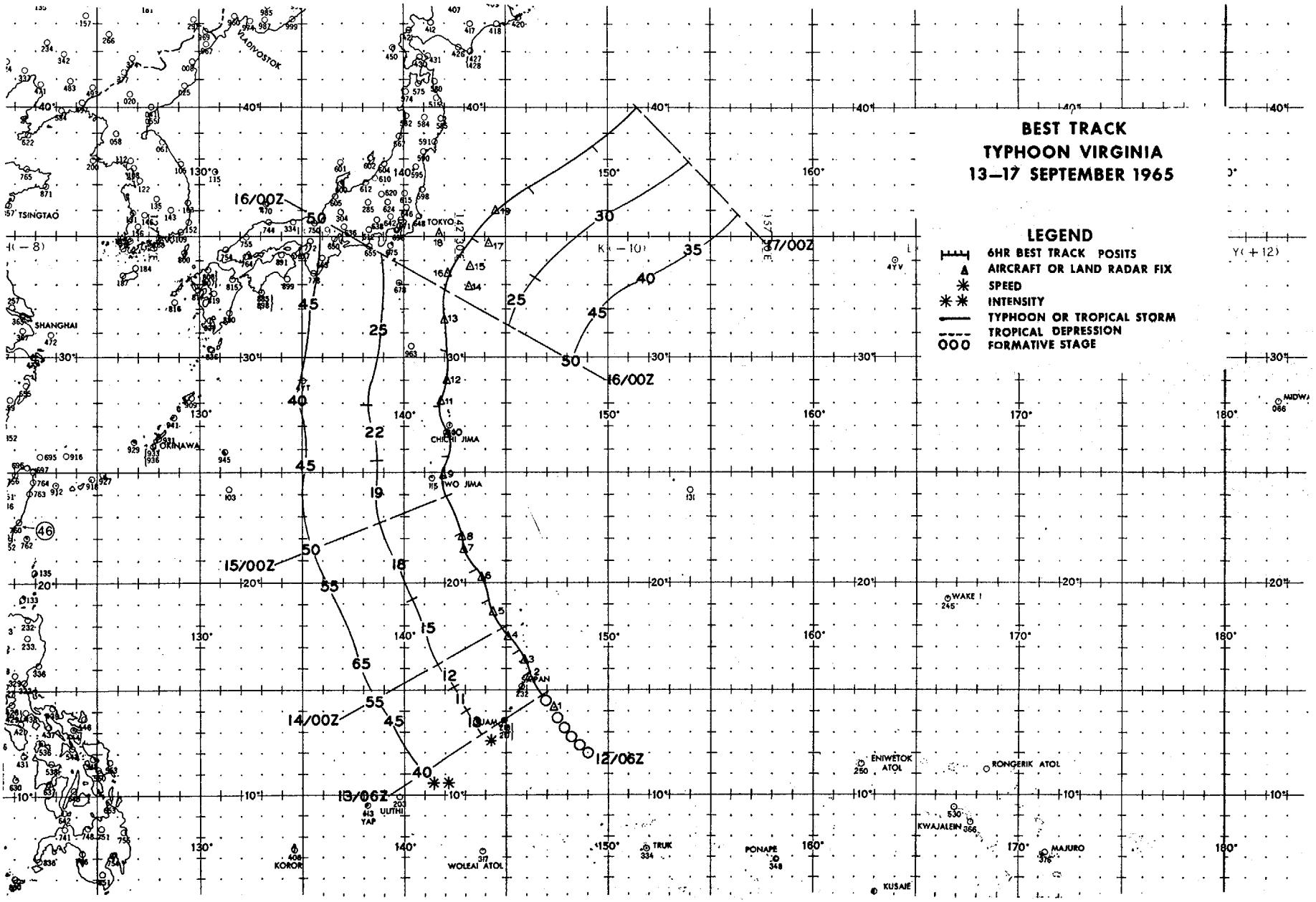
1. Junction vortex at 120600Z
2. Surface pressure less than 1006mbs

C. 200mb flow above surface vortex

1. Initial - northeast
2. Upon reaching typhoon intensity - under rapidly developing anticyclone

III. FINAL DISPOSITION

A. Became extratropical


BEST TRACK
TYPHOON VIRGINIA
13–17 SEPTEMBER 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
16/00Z
15/00Z
14/00Z
13/06Z
12/06Z
17/00Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
GUAM
SAIPAN
WAKE I
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
TRUK
PONAPE
KUSAIE
KOROR
WOLEAI ATOL
ULITHI
YAP
MIDWAY

EYE FIXES TYPHOON VIRGINIA

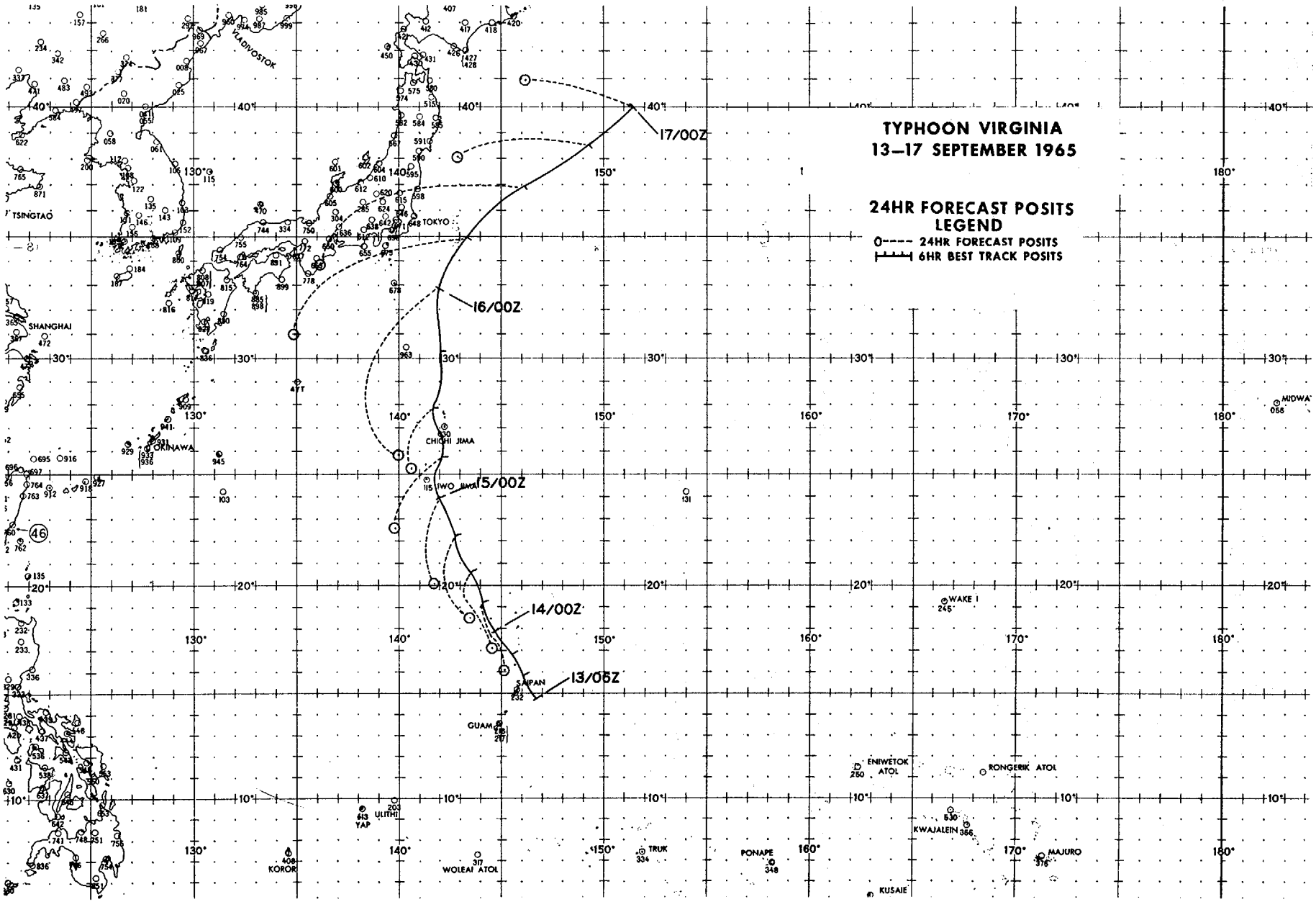
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	130343Z	14.2N 147.3E	54-P-P5	959mb	--	40	997	---	28/--	EYE CIRC 8 MI DIA
2	131000Z	15.6N 146.2E	VW1-R-F10	1500ft	28	35	---	---	--/--	
3	131445Z	16.3N 145.9E	VW1-R-F5	952mb	35	40	---	---	--/--	
4	132219Z	17.4N 145.1E	54-P-P4	700mb	--	50	994	3051	13/--	EYE CIRC 30 MI DIA
5	140315Z	18.6N 144.3E	54-P-P4	700mb	--	65	---	3048	15/--	EYE CIRC 25 MI DIA
6	141134Z	20.2N 143.8E	VW1-R-F5	957mb	28	--	---	---	--/--	
7	141433Z	21.5N 142.9E	VW1-P-P5	722mb	40	--	---	3081	15/--	WIND CNTR ELIP 19 X 13 NW-SE
8	142100Z	22.1N 142.8E	54-P-P3	700mb	33	50	989	3036	--/--	EYE CIRC 10 MI DIA. RDR EYE 40 MI SW OF 700MB CNTR
9	150300Z	24.8N 141.9E	54-P-P3	700mb	30	40	993	3036	10/--	RDR EYE 5 MI NW OF PRES EYE
10	150905Z	26.7N 142.2E	VW1-R-P5	963mb	26	20	---	---	--/--	EYE ELIP 20 X 15 NW-SE
11	151245Z	28.1N 141.8E	VW1-R-U	--	--	--	---	---	--/--	
12	151430Z	29.0N 142.1E	VW1-R-P1	1500ft	--	--	---	---	--/--	EYE CIRC 8 MI DIA. STM MOVG RAPIDLY
13	152115Z	31.6N 142.0E	54-P-F4	700mb	25	40	988	2999	16/--	EYE INDEF
14	160000Z	32.9N 143.2E	LND RDR	--	--	--	---	---	--/--	
15	160200Z	33.7N 143.3E	LND RDR	--	--	--	---	---	--/--	
16	160300Z	33.4N 142.1E	54-P-F1	700mb	55	40	---	2999	16/--	EYE INDEF

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
17	160500Z	34.7N 144.2E	LND RDR	--	--	--	---	---	--/--	
18	160600Z	35.1N 141.7E	LND RDR	--	--	--	---	---	--/--	
19	160930Z	36.0N 144.5E	VW1-P-P5	940mb	25	30	980	---	24/21	EYE CIRC 15 MI DIA. FDR BNDS ABSENT NW SEMI

TYPHOON VIRGINIA 13 SEPT-17 SEPT 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
130600Z	14.7N	146.7E	------	------
131200Z	15.8N	146.1E	------	------
131800Z	16.8N	145.5E	------	------
140000Z	17.8N	144.7E	------	------
140600Z	19.2N	144.1E	159-194	------
141200Z	20.6N	143.6E	165-210	------
141800Z	22.2N	142.8E	169-225	------
150000Z	23.8N	142.1E	185-222	------
150600Z	25.7N	142.1E	214-224	178-472
151200Z	27.8N	141.7E	202-170	176-492
151800Z	30.3N	142.1E	------	190-536
160000Z	32.8N	142.0E	194-425	197-605
160600Z	34.9N	143.3E	241-490	216-618
161200Z	36.8N	146.2E	249-518	228-570
161800Z	38.4N	149.3E	266-255	------
170000Z	40.0N	151.4E	283-249	228-1012

AVERAGE 24 HOUR ERROR 289 MI
AVERAGE 48 HOUR ERROR 615 MI


TYPHOON VIRGINIA
13–17 SEPTEMBER 1965
24HR FORECAST POSITS
LEGEND
24HR FORECAST POSITS
6HR BEST TRACK POSITS
13/06Z
14/00Z
15/00Z
16/00Z
17/00Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
ORINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
WAKE I
MIDWAY
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
TRUK
PONAPE
KUSAIE
ULITHI
YAP
KOROR
WOLEAI ATOL

TYPHOON BESS - 270600Z SEPTEMBER TO 041200Z OCTOBER

I. DATA

A. Statistics

1. Number of warnings issued - 30
2. Number of warnings with typhoon intensity - 29
3. Total distance traveled during tropical warning period - 1775 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 901mbs at 300300Z
2. Minimum observed 700mb height - 2265m. at 302100Z
3. Maximum surface wind - 150 kts (From Best Track)
4. Maximum radius of surface circulation - 850 mi

II. DEVELOPMENT

A. Initial impetus - Moderate easterly wave intensified under the southwesterly quadrant of an upper level anticyclone. Surge in Southern Hemisphere trades in the low levels intensified low.

B. Initial surface vortex

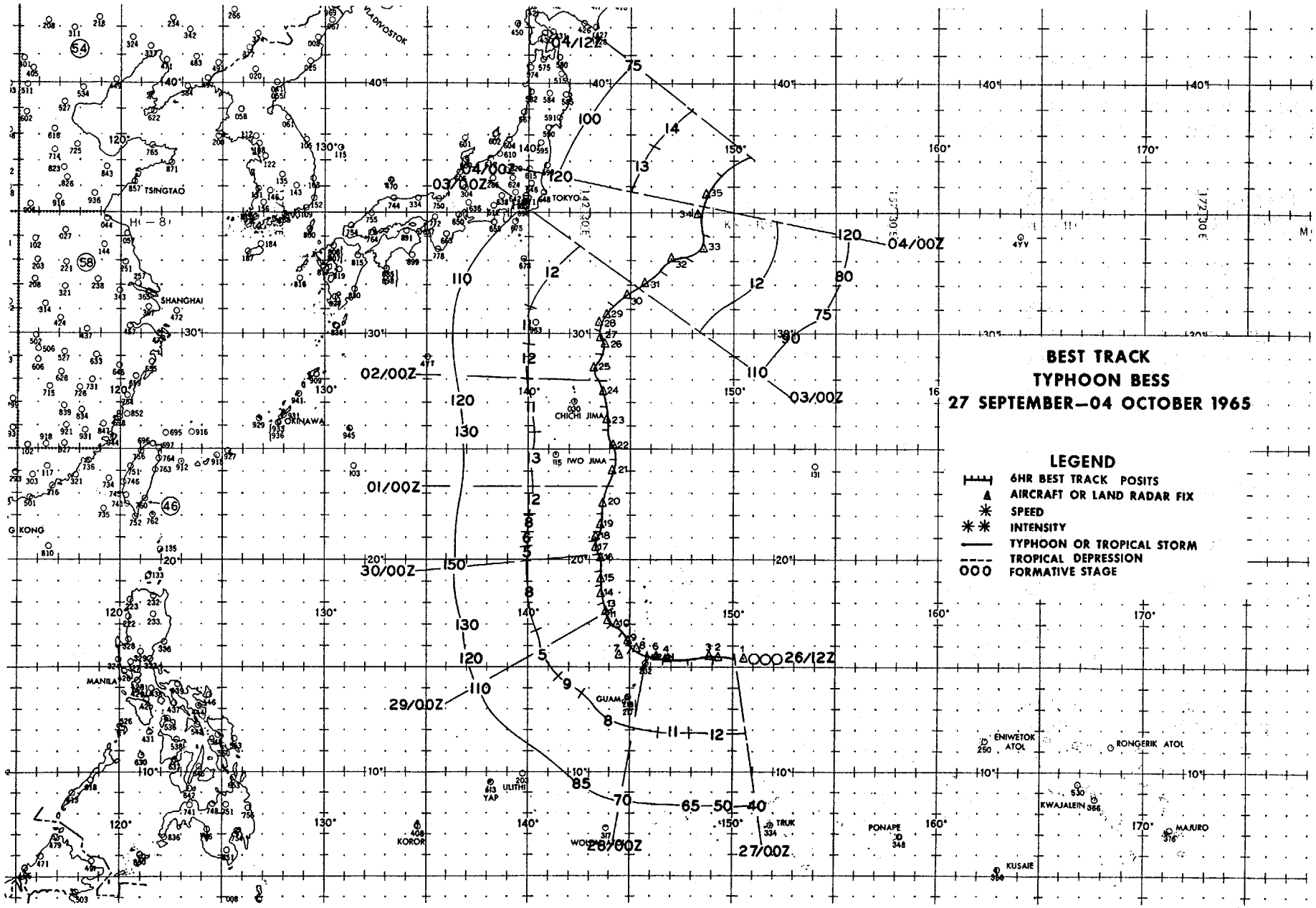
1. Imbedded vortex at 261200Z
2. Surface pressure less than 1008mbs

C. 200mb flow above surface vortex

1. Initial - southeasterly
2. Upon reaching typhoon intensity - east-northeasterly

III. FINAL DISPOSITION

A. Became extratropical


BEST TRACK
TYPHOON BESS
27 SEPTEMBER–04 OCTOBER 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
GUAM
MANILA
YAP
ULITHI
KOROR
TRUK
PONAPE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
KUSAIE
04/12Z
04/00Z
03/00Z
02/00Z
01/00Z
30/00Z
29/00Z
28/00Z
27/00Z
26/12Z

EYE FIXES TYPHOON BESS

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	262250Z	15.3N 150.5E	707 Jet	31000ft	--	--	---	---	--/--	EYE 40 MI DIA. CURVED FDR BNDS. FIX MADE BY WORLD AIRWAYS 707 JET
2	270340Z	15.4N 149.3E	54-P-P5	1500ft	--	40	995	---	25/--	EYE CIRC 30 MI DIA. FDR BNDS ALL QUADS
3	270800Z	15.5N 148.8E	54-P-P7	700mb	40	70	995	3060	15/--	EYE CIRC 25 MI DIA
4	271500Z	15.3N 146.8E	54-P-P2	700mb	30	--	994	3042	19/--	EYE CIRC 40 MI DIA
5	271714Z	15.4N 146.5E	54-R-P5	700mb	--	--	---	---	--/--	EYE CIRC 25 MI DIA
6	272015Z	15.4N 146.3E	54-R-P3	700mb	41	65	989	3011	16/--	EYE OVAL 30 X 20 N-S
7	280128Z	15.5N 144.5E	TIROS	--	--	--	---	---	--/--	STAGE X, DIA 5, BNDS 2
8	280300Z	15.8N 145.3E	54-P-P1	700mb	48	95	966	2871	14/--	EYE CIRC 10 MI DIA. CNTR APPRS IN CONSTANT CHANGE
9	280825Z	16.2N 144.9E	VW1-P-P2	947mb	40	65	978	---	26/21	EYE CIRC 17 MI DIA
10	281433Z	17.0N 144.3E	VW1-P-P3	702mb	40	--	---	2877	17/11	EYE CIRC 23 MI DIA. RDR EYE 220 DEG 8 MI FM PRES TEMP EYE
11	282125Z	17.2N 143.9E	54-P-P5	850mb	75	130	---	---	--/--	SFC EYE CIRC 10 MI DIA. WALL CLD INNER DIA 20 MI
12	282210Z	17.3N 143.8E	54-P-P5	700mb	75	130	968	2838	18/--	EYE CIRC 8 MI DIA

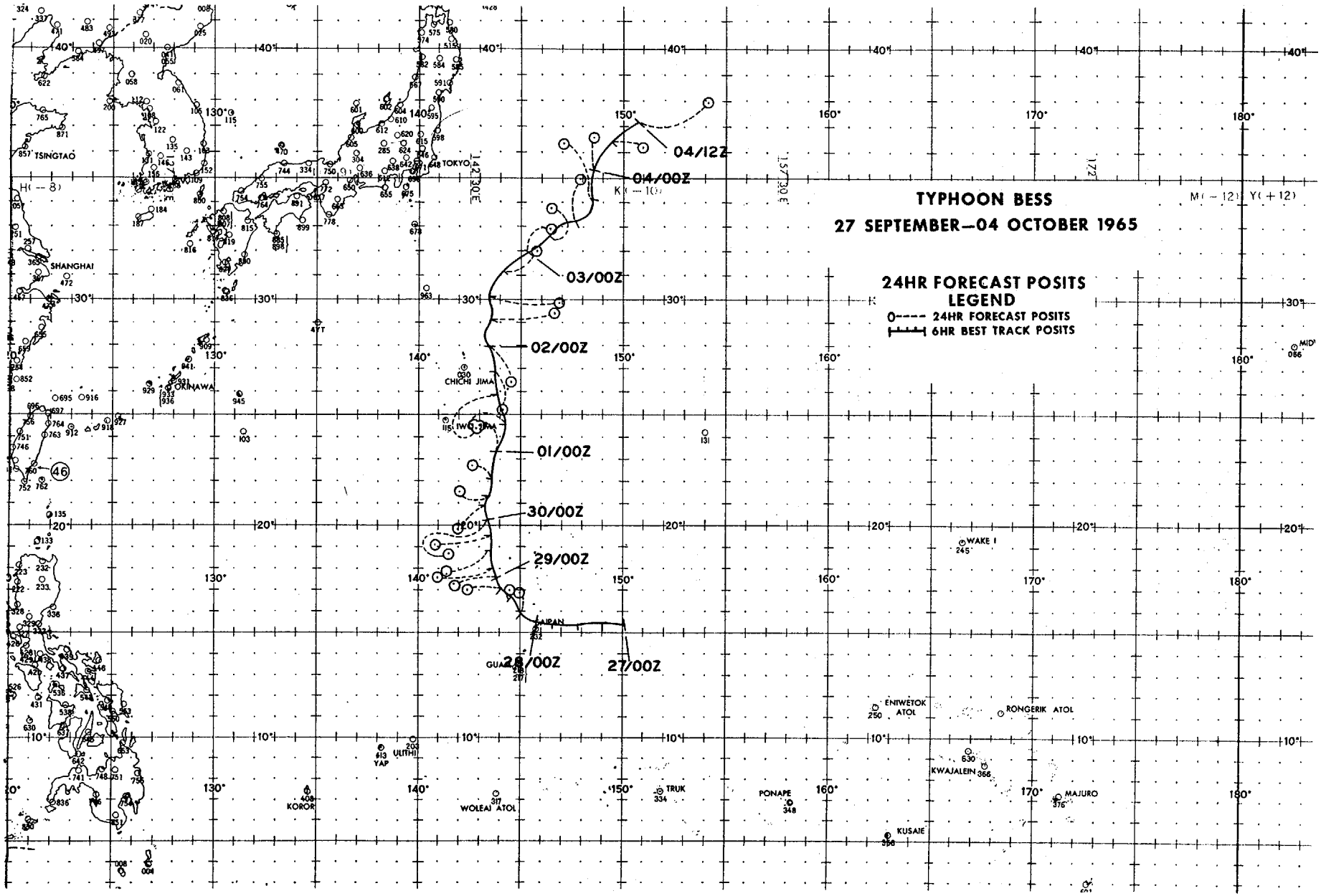
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
13	290252Z	17.6N 143.8E	54-P-P5	700mb	75	85	967	2792	15/--	EYE CIRC 8 MI DIA
14	290830Z	18.4N 143.6E	VW1-R-P3	897mb	--	--	---	---	--/--	EYE CIRC 8 MI DIA
15	291440Z	19.1N 143.5E	VW1-R-P5	700mb	--	--	---	---	--/--	EYE CIRC 12 MI DIA
16	292125Z	20.1N 143.6E	54-P-P1	700mb	--	--	932	2506	17/--	EYE CIRC 15 MI DIA
17	300300Z	20.6N 143.3E	54-P-P1	700mb	130	--	901	2295	24/--	EYE CIRC 20 MI DIA
18	300830Z	21.0N 143.3E	VW1-R-P5	935mb	--	--	---	---	--/--	EYE CIRC 18 MI DIA
19	301430Z	21.6N 143.5E	VW1-R-P5	680mb	--	--	---	---	--/--	EYE CIRC 20 MI DIA
20	302100Z	22.6N 143.7E	54-P-P2	700mb	100	150	906	2265	23/--	EYE CIRC 20 MI DIA. SKY CLR ABOVE EYE
21	010330Z	24.0N 144.1E	54-P-PØ	700mb	73	150	924	2426	18/--	EYE CIRC 17 MI DIA
22	010900Z	25.2N 144.2E	VW1-R-P5	938mb	--	--	---	---	--/--	EYE CIRC 18 MI DIA
23	011440Z	26.3N 143.8E	VW1-R-P3	700mb	--	--	---	---	--/--	EYE CIRC 17 MI DIA
24	012110Z	27.5N 143.7E	54-P-P5	700mb	85	100	936	2560	22/--	EYE CIRC 20 MI DIA
25	020300Z	28.5N 143.2E	54-P-P4	700mb	85	150	943	---	21/--	EYE APPRS TO BE FILLING
26	020845Z	29.6N 143.8E	VW1-R-P2	700mb	--	--	---	---	--/--	EYE CIRC 13 MI DIA
27	021100Z	29.8N 143.6E	VW1-R-U	--	--	--	---	---	--/--	
28	021300Z	30.4N 143.5E	VW1-R-U	--	--	--	---	---	--/--	
29	021445Z	30.7N 143.8E	VW1-R-P2	700mb	--	--	---	---	--/--	EYE CIRC 10 MI DIA
30	022130Z	31.6N 144.8E	54-P-P4	700mb	60	150	962	2746	16/--	EYE CIRC 5 MI DIA

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
31	030247Z	32.1N 145.7E	54-P-P2	700mb	55	110	972	2777	21/--	CNTR CIRC 4 MI DIA. NEG WALL CLDS
32	030915Z	33.1N 147.0E	VW1-P-P10	700mb	--	70	---	2816	16/15	EYE CIRC 9 MI DIA. POOR RDR EYE
33	031230Z	33.5N 148.6E	VW1-P-F10	700mb	--	--	---	2834	16/08	
34	032158Z	34.9N 148.3E	54-P-P5	700mb	55	75	969	2841	18/--	NO APPARENT EYE
35	040215Z	35.7N 148.7E	54-P-P5	700mb	70	140	969	2844	18/--	NEG EYE OR FDR BNDS

TYPHOON BESS 27 SEPT-04 OCT 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
270000Z	15.3N	150.2E	------	------
270600Z	15.4N	149.0E	------	------
271200Z	15.4N	147.8E	------	------
271800Z	15.4N	146.6E	------	------
280000Z	15.5N	145.8E	------	------
280600Z	15.9N	145.0E	357-58	------
281200Z	16.6N	144.6E	346-28	------
281800Z	17.0N	144.1E	270-97	------
290000Z	17.5N	143.8E	266-114	------
290600Z	18.0N	143.7E	260-153	274-143
291200Z	18.8N	143.6E	242-142	262-165
291800Z	19.5N	143.6E	260-155	264-329
300000Z	20.3N	143.4E	227-146	254-311
300600Z	20.8N	143.3E	230-92	255-348
301200Z	21.3N	143.5E	276-77	246-297
301800Z	22.1N	143.6E	304-62	258-304
010000Z	23.3N	143.9E	326-91	231-314
010600Z	24.5N	144.3E	271-87	231-275
011200Z	25.8N	143.9E	218-101	232-201
011800Z	26.8N	143.8E	168-100	227-106
020000Z	27.9N	143.4E	145-110	043-133
020600Z	29.1N	143.5E	083-172	075-84
021200Z	30.1N	143.5E	95-178	154-110
021800Z	31.2N	144.2E	058-97	128-140
030000Z	31.9N	145.3E	042-80	94-122
030600Z	32.6N	146.4E	004-65	58-418
031200Z	33.2N	147.7E	007-94	63-253
031800Z	34.2N	148.4E	335-145	44-360
040000Z	35.3N	148.5E	004-77	51-368
040600Z	36.4N	149.5E	98-77	55-330
041200Z	37.2N	150.8E	74-170	59-510

AVERAGE 24 HOUR ERROR 106 MI
AVERAGE 48 HOUR ERROR 256 MI


TYPHOON BESS
27 SEPTEMBER—04 OCTOBER 1965
24HR FORECAST POSITS
LEGEND
0---- 24HR FORECAST POSITS
6HR BEST TRACK POSITS
04/12Z
04/00Z
03/00Z
02/00Z
01/00Z
30/00Z
29/00Z
28/00Z
27/00Z
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
WAKE I
H(-8)
K(-10)
M(-12)
Y(+12)
142°30'E
157°30'E
172°

TYPHOON CARMEN - 010600Z TO 100600Z OCTOBER

I. DATA

A. Statistics

1. Number of warnings issued - 37
2. Number of warnings with typhoon intensity - 18
3. Total distance traveled during tropical warning period - 2775 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 916mbs at 080300Z
2. Minimum observed 700mb height - 2289m. at 070226Z
3. Maximum surface wind - 150 kts (From Best Track)
4. Maximum radius of surface circulation - 825 mi

II. DEVELOPMENT

A. Initial impetus - Surge in the northeasterly trades

B. Initial surface vortex

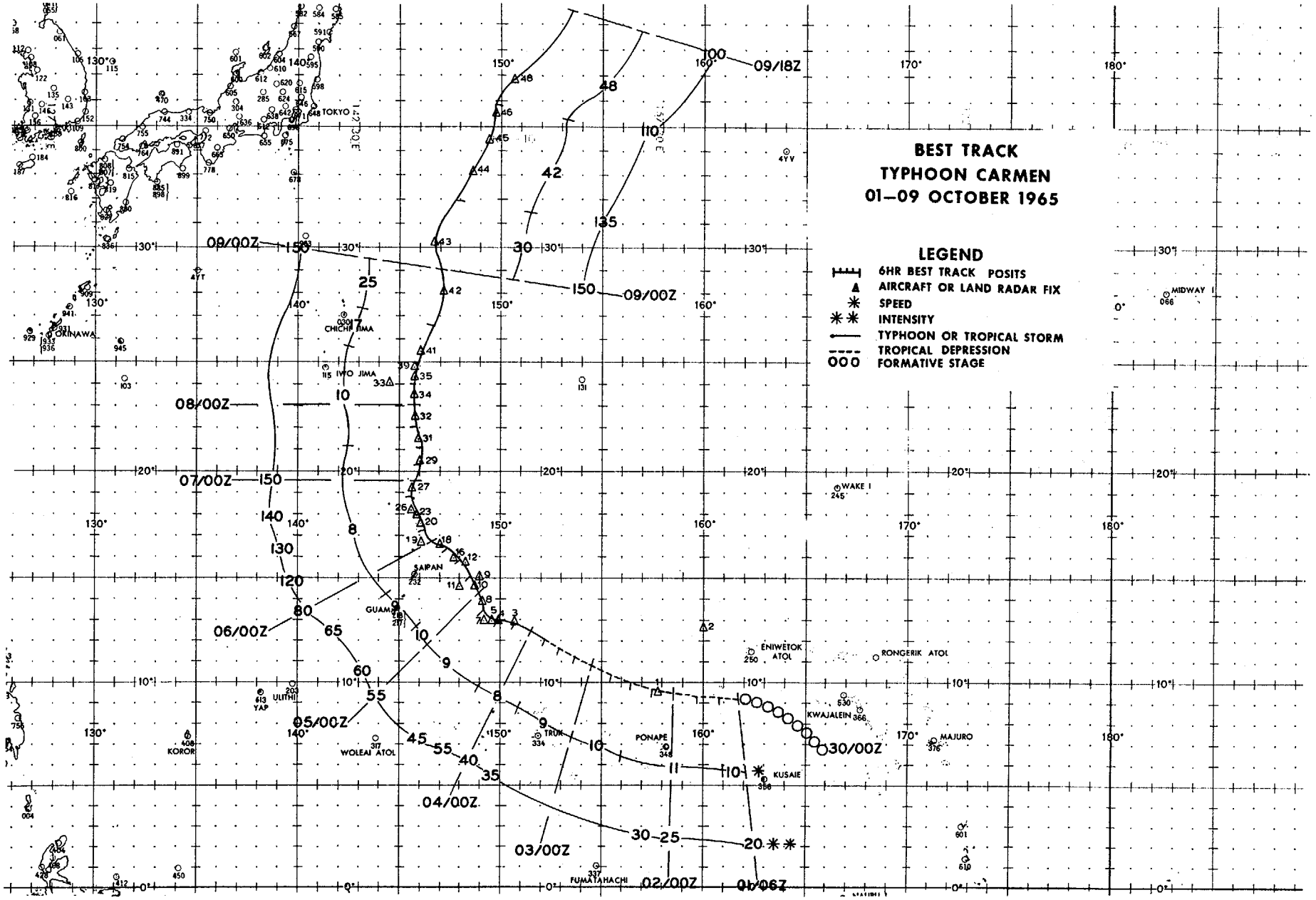
1. Junction vortex at 300000Z
2. Surface pressure less than 1008mbs

C. 200mb flow above surface vortex

1. Initial - southerly flow
2. Upon reaching typhoon intensity - under anticyclone

III. FINAL DISPOSITION

A. Became extratropical


BEST TRACK
TYPHOON CARMEN
01–09 OCTOBER 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
KUSAIE
MAJURO
WAKE I
MIDWAY I
FUMATAHACHI
09/18Z
09/00Z
08/00Z
07/00Z
06/00Z
05/00Z
04/00Z
03/00Z
02/00Z
01/06Z
30/00Z

EYE FIXES TYPHOON CARMEN

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	020440Z	09.6N 157.8E	54-P-F3	700mb	--	30	1005	3075	10/--	CNTR CIRC 130 MI DIA
2	040237Z	12.6N 160.0E	54-P-P5	1500ft	25	120	994	---	26/--	EYE CIRC 5 MI DIA
3	040930Z	12.9N 150.7E	VW1-P-P5	972mb	25	20	999	---	22/18	CNTR CIRC 15 MI DIA. NO WALL CLD
4	041200Z	12.9N 149.9E	VW1-R-U	--	--	--	---	---	--/--	
5	041300Z	12.9N 149.6E	VW1-R-U	--	--	--	---	---	--/--	
6	041400Z	13.0N 149.4E	VW1-R-U	--	--	--	---	---	--/--	
7	041445Z	12.9N 149.2E	VW1-P-P5	690mb	30	--	---	---	08/05	CNTR CIRC 12 MI DIA. NO WALL CLD
8	042112Z	13.8N 149.1E	54-P-P3	700mb	--	45	991	3008	10/--	EYE CIRC 10 MI DIA. WALL CLD BUILDING E THRU N
9	050118Z	15.0N 149.0E	TIROS	--	--	--	---	---	--/--	STAGE D, DIA 4, BNDS 1
10	050200Z	14.6N 148.8E	C121	--	--	--	---	---	--/--	C121 ACFT RPT
11	050310Z	14.6N 148.0E	54-P-P3	700mb	--	55	987	2987	11/--	EYE CIRC 8 MI DIA
12	050855Z	15.7N 148.3E	VW1-P-P5	325m	40	45	981	---	26/20	EYE CIRC 8 MI DIA
13	051000Z	15.7N 148.1E	VW1-R-U	--	--	--	---	---	--/--	
14	051200Z	15.8N 148.0E	VW1-R-U	--	--	--	---	---	--/--	
15	051300Z	15.7N 147.8E	VW1-R-U	--	--	--	---	---	--/--	

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
16	051400Z	15.9N 147.7E	VW1-R-U	--	--	--	---	---	--/--	
17	051455Z	16.0N 147.6E	VW1-P-P3	700mb	60	--	---	2871	14/09	EYE CIRC 15 MI DIA
18	052100Z	16.6N 147.0E	54-P-P5	700mb	71	65	969	2800	15/--	RDR SHOWS ONE EYE 10 MI DIA AND ONE SMALL EYE 3 MI DIA POSITD AGAINST S WALL CLD. LOWEST PRES & SFC CALM IN SMALL EYE
19	060300Z	16.6N 146.1E	54-P-P5	700mb	95	120	950	2661	19/--	"PERFECT" EYE CIRC 8 MI DIA
20	060830Z	17.6N 146.1E	VW1-R-P3	955m	--	--	---	---	--/--	CLASSIC PRESENTATION. EYE CIRC 7 MI DIA
21	061000Z	17.7N 146.2E	VW1-R-U	--	--	--	---	---	--/--	
22	061100Z	17.8N 146.1E	VW1-R-U	--	--	--	---	---	--/--	
23	061200Z	17.9N 145.9E	VW1-R-U	--	--	--	---	---	--/--	
24	061300Z	See Remarks	VW1-R-U	--	--	--	---	---	--/--	EYE CNTRD OVER PAGEN ISLAND, M.I.
25	061400Z	18.2N 145.7E	VW1-R-U	--	--	--	---	---	--/--	
26	061430Z	18.2N 145.6E	VW1-R-P3	685mb	--	--	---	---	--/--	EYE CIRC 7 MI DIA
27	062108Z	19.2N 145.6E	54-P-P5	700mb	115	150	923	2399	19/--	EYE CIRC 7 MI DIA. SMALLER INNER EYE 3 MI DIA AGAINST W WALL CLD WITHIN LARGER EYE
28	070226Z	19.4N 145.7E	54-P-P10	700mb	110	175	---	2289	24/--	EYE CIRC 5 MI DIA

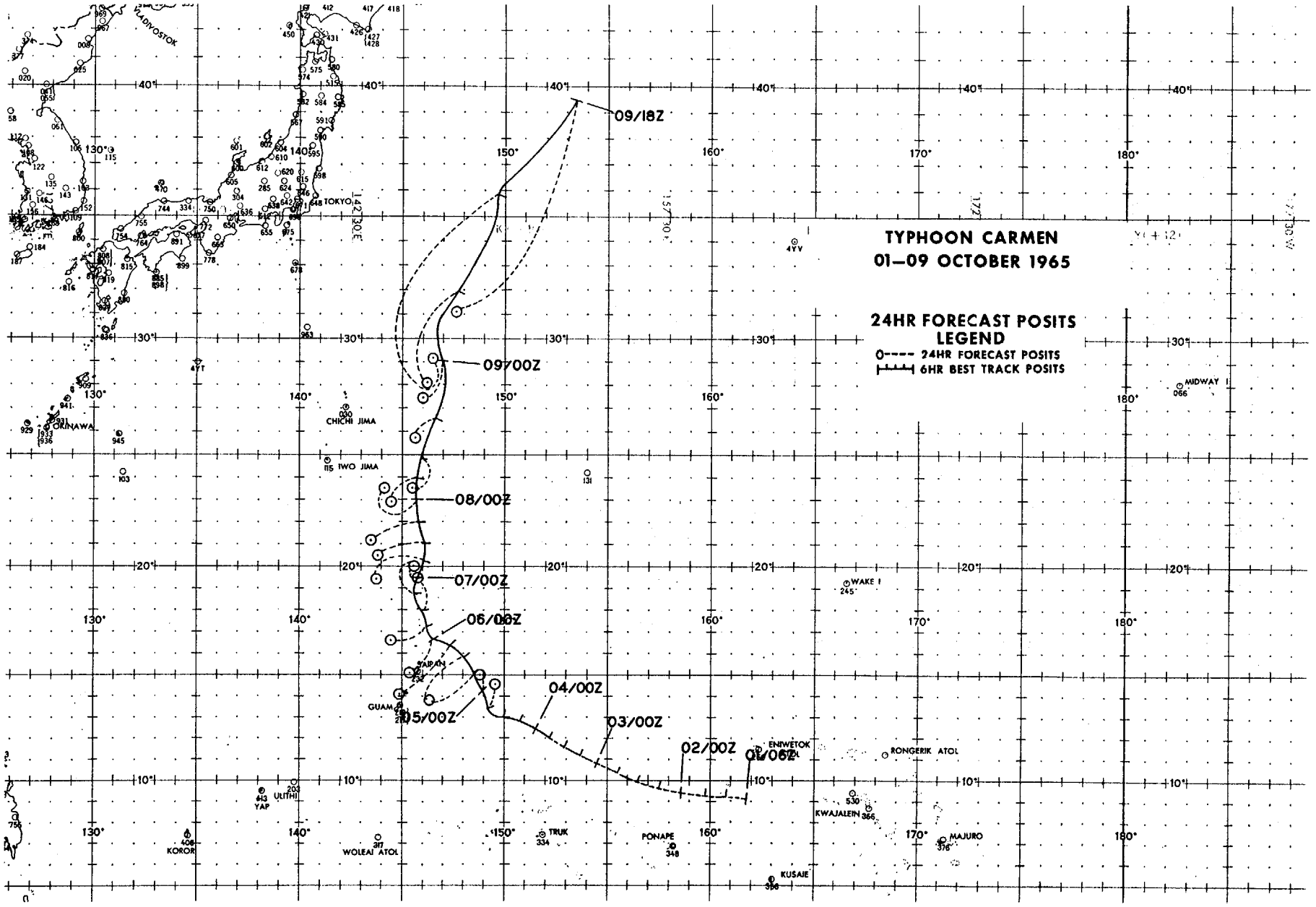
FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
29	070845Z	20.4N 146.0E	VW1-R-P5	274m	--	--	---	---	--/--	EYE ELIP 7 X 6 N-S. BNDS VERY TIGHT OUT TO 25 MI. XTNSV PACKED BNDS TO 60 MI NE QUAD
30	071030Z	20.8N 146.1E	VW1-R-U	--	--	--	---	---	--/--	
31	071445Z	21.4N 145.9E	VW1-R-P5	351m	--	--	---	---	--/--	EYE CIRC 8 MI DIA. TIGHT BNDS AROUND CNTR
32	072100Z	22.5N 145.7E	54-P-P5	700mb	75	150	919	2361	22/--	EYE CIRC 15 MI DIA. CLASSIC FDR BNDS ALL QUADS
33	080130Z	24.0N 144.5E	TIROS	--	--	--	---	---	--/--	STAGE X, DIA 7, BNDS 4 EYE DIMLY VSBL
34	080300Z	23.4N 145.7E	54-P-P10	700mb	125	150	916	2341	23/--	EYE CIRC 18 MI DIA. HUB CLD TOP TO 12000 FT 1 MI N SFC CNTR
35	080730Z	24.3N 145.7E	VW1-R-U	--	--	--	---	---	--/--	
36	080840Z	24.4N 145.6E	VW1-R-P5	244m	--	--	---	---	--/--	EYE CIRC 12 MI DIA
37	081000Z	24.5N 145.7E	VW1-R-U	--	--	--	---	---	--/--	
38	081100Z	24.7N 145.7E	VW1-R-U	--	--	--	---	---	--/--	
39	081200Z	24.8N 145.7E	VW1-R-U	--	--	--	---	---	--/--	
40	081300Z	25.1N 145.7E	VW1-R-U	--	--	--	---	---	--/--	
41	081430Z	25.4N 146.0E	VW1-R-P5	700mb	--	--	---	---	--/--	EYE CIRC 10 MI DIA
42	082235Z	28.1N 147.1E	54-P-P3	700mb	80	--	945	2618	15/--	EYE OVAL 10 X 7 N-S. LGT RAIN IN EYE

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
43	090300Z	30.2N 146.7E	54-P-P3	700mb	--	150	956	2734	14/--	EYE CIRC 8 MI DIA. WALL CLD LGT MOD 10 MI THK N QUAD ONLY. FDR BNDS ALL QUADS
44	090850Z	33.2N 148.6E	VW1-R-F10	396m	--	--	---	---	--/--	NEG DEFINED BNDS, VERY POORLY DEFINED RDR EYE
45	091000Z	34.4N 149.4E	VW1-R-U	--	--	--	---	---	--/--	
46	091100Z	35.5N 149.7E	VW1-R-U	--	--	--	---	---	--/--	
47	091200Z	35.8N 149.7E	VW1-R-U	--	--	--	---	---	--/--	
48	091401Z	36.8N 150.6E	VW1-P-P5	700mb	100	100	---	2775	--/--	NEG RDR PRESENTATION, EYE HELD VISUAL
49	100200Z	45.0N 154.2E	54-P-P3	700mb	--	--	997	2829	11/--	CNTR CIRC 20 MI DIA

TYPHOON CARMEN 01 OCT-09 OCT 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
010600Z	09.2N	161.8E	------	------
011200Z	09.3N	160.8E	------	------
011800Z	09.3N	159.7E	------	------
020000Z	09.4N	158.6E	------	------
020600Z	09.6N	157.5E	------	------
021200Z	10.0N	156.4E	------	------
021800Z	10.3N	155.4E	------	------
030000Z	10.7N	154.5E	------	------
030600Z	11.2N	153.7E	------	------
031200Z	11.6N	152.9E	------	------
031800Z	12.0N	152.2E	------	------
040000Z	12.4N	151.5E	------	------
040600Z	12.7N	150.7E	------	------
041200Z	12.9N	149.9E	------	------
041800Z	13.4N	149.2E	019-73	------
050000Z	14.3N	149.0E	348-41	------
050600Z	15.1N	148.4E	232-138	------
051200Z	15.8N	148.0E	224-155	------
051800Z	16.4N	147.3E	226-198	------
060000Z	16.6N	146.5E	220-121	------
060600Z	17.3N	146.2E	246-105	237-239
061200Z	18.0N	145.9E	175-90	234-252
061800Z	18.7N	145.5E	004-75	238-259
070000Z	19.5N	145.7E	353-33	243-145
070600Z	20.3N	146.0E	248-130	273-110
071200Z	21.1N	146.1E	254-137	348-150
071800Z	22.0N	145.8E	249-137	002-205
080000Z	23.0N	145.7E	285-84	355-60
080600Z	24.0N	145.7E	222-92	244-156
081200Z	24.9N	145.8E	193-96	240-158
081800Z	26.6N	146.6E	227-74	236-204
090000Z	29.1N	147.0E	208-112	228-164
090600Z	32.0N	147.8E	200-240	208-347
091200Z	35.8N	149.7E	202-416	200-497
091800Z	39.6N	153.5E	210-555	208-617

AVERAGE 24 HOUR ERROR 148 MI
AVERAGE 48 HOUR ERROR 238 MI


TYPHOON CARMEN
01–09 OCTOBER 1965
24HR FORECAST POSITS
LEGEND
24HR FORECAST POSITS
6HR BEST TRACK POSITS
09/18Z
09/00Z
08/00Z
07/00Z
06/00Z
05/00Z
04/00Z
03/00Z
02/00Z
01/06Z
VLADIVOSTOK
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
ENIWETOK
RONGERIK ATOL
KWAJALEIN
MAJURO
WAKE I
MIDWAY I

TYPHOON DELLA - 130000Z TO 191800Z OCTOBER

I. DATA

A. Statistics

1. Number of warnings issued - 28
2. Number of warnings with typhoon intensity - 20
3. Total distance traveled during tropical warning period - 2100 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 970mbs at 171430Z
2. Minimum observed 700mb height - 2850m. at 162055Z
3. Maximum surface wind - 85 kts (From Best Track)
4. Maximum radius of surface circulation - 900 mi

II. DEVELOPMENT

A. Initial impetus - A small anticyclone at 200mb drifted over the junction vortex. The system developed by diverting the low level Southern Hemisphere inflow from T. D. 36.

B. Initial surface vortex

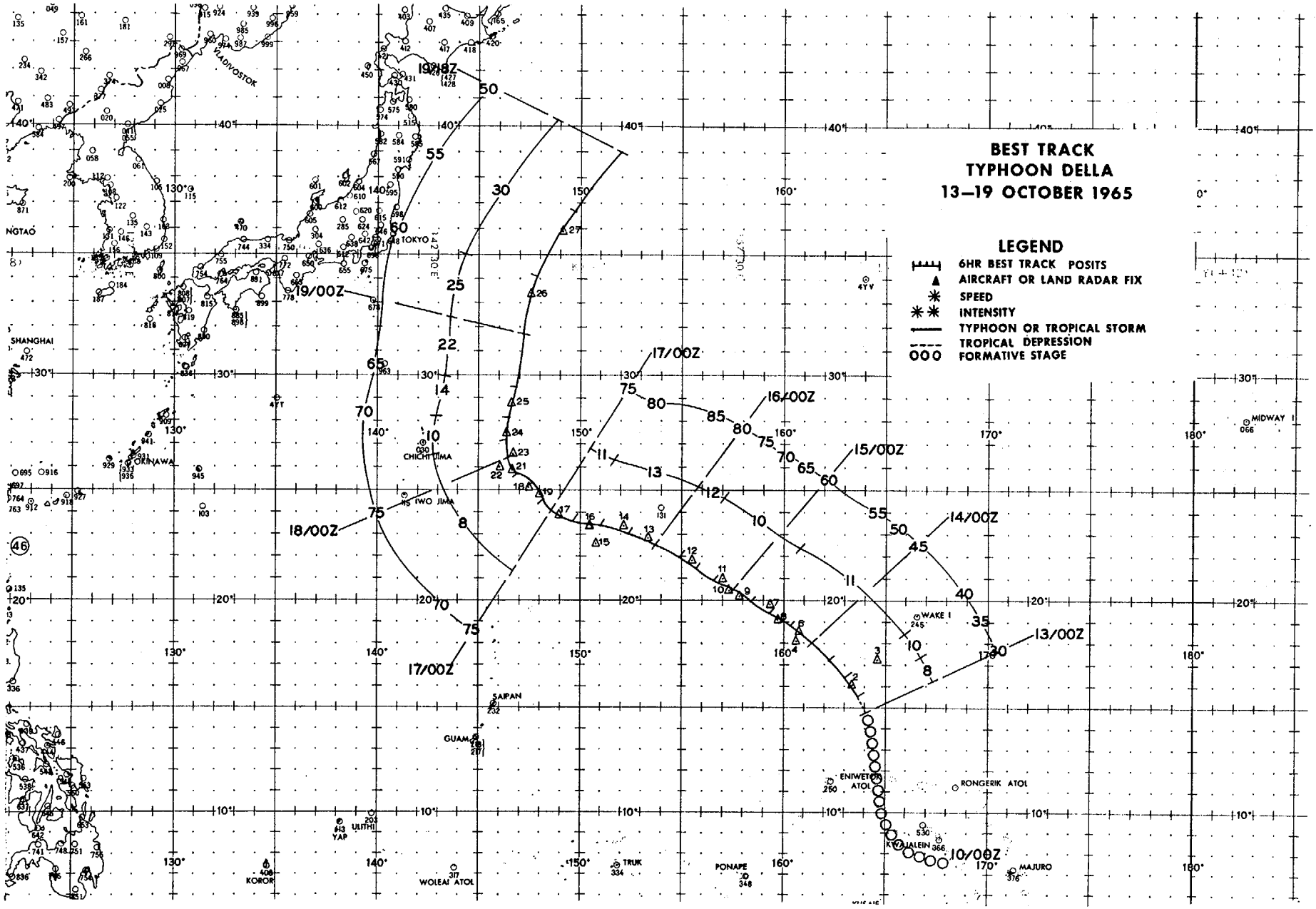
1. Junction vortex at 100000Z
2. Surface pressure less than 1008mbs

C. 200mb flow above surface vortex

1. Initial - center of small anticyclone
2. Upon reaching typhoon intensity - south quad of anticyclone

III. FINAL DISPOSITION

A. Became extratropical


BEST TRACK
TYPHOON DELLA
13–19 OCTOBER 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
VLADIVOSTOK
TOKYO
SHANGHAI
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
WAKE I
MIDWAY I
19/18Z
19/00Z
18/00Z
17/00Z
16/00Z
15/00Z
14/00Z
13/00Z
10/00Z

EYE FIXES TYPHOON DELLA

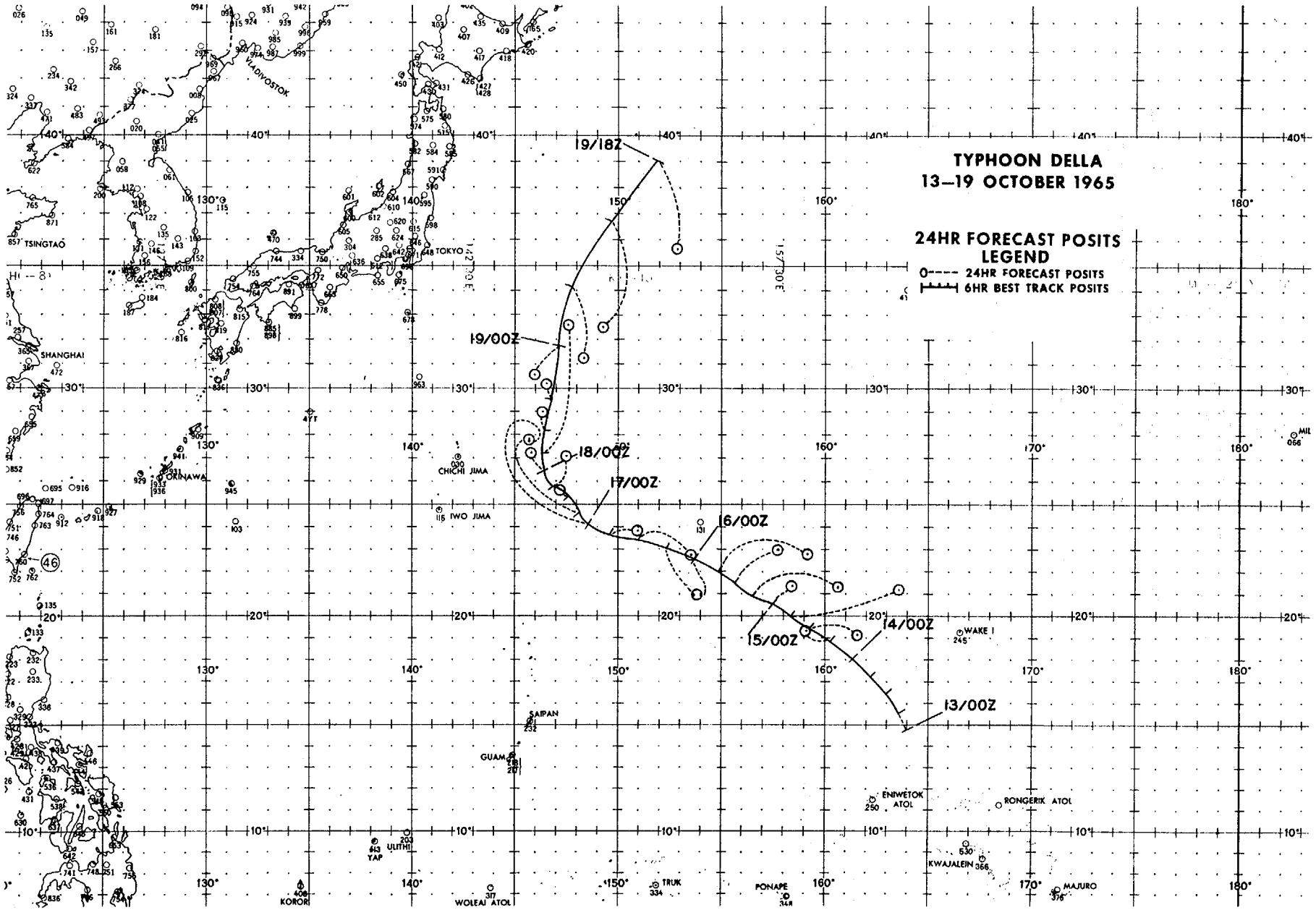
FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	122345Z	16.1N 163.2E	54-P-U	700mb	--	--	---	3100	11/--	ESTIMATED FROM RECON
2	130850Z	16.1N 163.3E	VW1-P-P5	1100ft	--	--	995	---	23/19	CNTR ILL DEFINED. FDR BNDS FORMING E THRU W
3	131510Z	17.3N 164.6E	VW1-R-P3	1380ft	--	35	998	---	23/16	EYE CIRC 7 MI DIA
4	132220Z	18.1N 160.6E	54-P-P3	1500ft	--	45	996	---	25/--	CNTR INDISTINCT. WX BNDS CIRCLE AREA
5	132309Z	18.1N 160.6E	SB123 ACFT	16000ft	--	--	---	---	--/--	PILOT RPTD EYE FILLED WITH THIN CLDS
6	140300Z	18.4N 160.8E	54-P-P3	1500ft	--	50	992	3048	26/--	CNTR INDISTINCT. MAX WND AND WX 360/230 MI FM CNTR
7	140915Z	19.8N 159.3E	VW1-P-P3	1200ft	22	--	990	---	25/21	HOOK EYE SHAPE 25 MI DIA WX FDR BND 150 MI NE TO 100 MI W TO 50 MI SE
8	141445Z	19.1N 159.7E	VW1-P-P3	1100ft	--	--	988	---	25/23	EYE CIRC 4 MI DIA. WALL CLDS ALL QUADS TO 40000 FT
9	142100Z	20.2N 157.8E	54-P-P2	700mb	--	60	987	2999	15/--	CNTR INDISTINCT. MAX SFC WND 060/150 MI FM CNTR
10	150300Z	20.4N 157.3E	54-P-P4	700mb	--	75	980	2932	16/--	CNTR INDEFINITE. MAX SFC WND 050/80 MI FM CNTR
11	150915Z	21.0N 157.0E	VW1-P-P5	1150ft	--	--	984	---	25/21	NO RDR EYE. WEAK FDR BNDS ALL QUADS
12	151445Z	21.8N 155.4E	VW1-P-P3	1110ft	--	--	979	---	26/23	NO RDR CNTR

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
13	152245Z	22.8N 153.3E	54-P-F10	700mb	80	50	982	2920	17/--	CNTR 40 MI DIA
14	160312Z	23.3N 152.1E	54-P-P10	700mb	80	90	977	2880	16/--	CNTR LARGE AREA LGT WNDS MAX SFC WND 180/140 MI FM CNTR
15	160855Z	22.6N 150.8E	VW1-P-P5	950mb	60	40	971	---	25/18	CNTR DISORGANIZED. PSBL RDR CNTR 037/7 MI
16	161445Z	23.4N 150.4E	VW1-P-P10	950mb	--	45	971	---	25/20	CNTR ELIP NW-SE 40 X 25 MI
17	162055Z	23.9N 148.9E	54-P-P5	700mb	65	65	971	2850	17/--	CNTR CIRC 30 MI DIA
18	170243Z	25.2N 147.4E	54-P-P5	700mb	65	65	973	2865	17/--	CNTR OVAL N-S 40 X 80 MI
19	170830Z	24.8N 148.0E	VW1-P-P5	800ft	70	65	963	---	--/--	CNTR CIRC 40 MI DIA MAX SFC WNDS 40-90 MI SW QUAD
20	171430Z	25.3N 147.4E	VW1-P-P5	1500ft	--	--	970	2945	25/22	CNTR CIRC 11 MI DIA. NO FDR BNDS
21	172120Z	25.9N 146.6E	54-P-F15	700mb	--	100	978	2923	16/--	CNTR CIRC 6 MI DIA
22	180133Z	26.0N 146.0E	TIROS	--	--	--	---	---	--/--	STAGE X, DIA 5, BNDS 3
23	180250Z	26.6N 146.6E	54-P-P10	700mb	75	90	980	2944	16/--	NO RDR PICTURE
24	180910Z	27.5N 146.3E	VW1-P-P3	244m	46	45	976	---	25/--	CNTR CIRC 5 MI DIA
25	181450Z	28.8N 146.6E	VW1-P-P5	952mb	--	--	976	2929	25/--	CNTR CIRC 7 MI DIA
26	190355Z	33.4N 147.5E	54-P-P3	700mb	--	65	982	2896	15/--	CNTR INDEFINITE
27	191030Z	36.0N 149.1E	VW1-P-P10	955mb	54	--	995	---	23/20	CNTR CIRC 8 MI DIA

TYPHOON DELLA 13 OCT-19 OCT 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
130000Z	14.8N	164.0E	------	------
130600Z	15.6N	163.6E	------	------
131200Z	16.4N	163.0E	------	------
131800Z	17.2N	162.2E	------	------
140000Z	18.0N	161.3E	------	------
140600Z	18.8N	160.3E	296-73	------
141200Z	19.4N	159.3E	97-125	------
141800Z	20.0N	158.3E	76-308	------
150000Z	20.4N	157.4E	45-77	------
150600Z	20.9N	156.5E	84-208	------
151200Z	21.5N	155.7E	51-142	------
151800Z	22.0N	154.9E	80-247	68-408
160000Z	22.5N	153.7E	170-103	56-276
160600Z	23.0N	152.3E	149-146	78-456
161200Z	23.4N	151.0E	104-144	61-447
161800Z	23.6N	149.6E	81-77	75-648
170000Z	24.1N	148.6E	324-273	145-192
170600Z	24.6N	148.1E	326-230	156-196
171200Z	25.3N	147.6E	317-28	115-170
171800Z	25.7N	146.8E	23-91	60-37
180000Z	26.4N	146.4E	324-58	19-517
180600Z	27.2N	146.3E	11-342	17-383
181200Z	28.2N	146.4E	358-47	292-50
181800Z	29.5N	146.8E	335-38	43-87
190000Z	31.7N	147.2E	223-89	22-165
190600Z	34.2N	147.8E	172-177	50-521
191200Z	36.7N	149.7E	185-255	168-93
191800Z	39.0N	152.0E	168-212	140-66

AVERAGE 24 HOUR ERROR 152 MI
AVERAGE 48 HOUR ERROR 277 MI


TYPHOON DELLA
13–19 OCTOBER 1965
24HR FORECAST POSITS
LEGEND
24HR FORECAST POSITS
6HR BEST TRACK POSITS
19/18Z
19/00Z
18/00Z
17/00Z
16/00Z
15/00Z
14/00Z
13/00Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
WAKE I
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
TRUK
PONAPE
WOLEAI ATOL
KOROR
YAP
ULITHI

TYPHOON FAYE - 140000Z TO 260000Z NOVEMBER

I. DATA

A. Statistics

1. Number of warnings issued - 49
2. Number of warnings with typhoon intensity - 21
3. Total distance traveled during tropical warning period - 4001 mi

B. Characteristics as a typhoon

1. Minimum observed SLP - 925mbs at 232142Z
2. Minimum observed 700mb height - 2324m. at 230945Z
3. Maximum surface wind - 135 kts (From Best Track)
4. Maximum radius of surface circulation - 700 mi

II. DEVELOPMENT

A. Initial impetus - Low level inflow of Southern Hemisphere air with divergence aloft behind MPT

B. Initial surface vortex

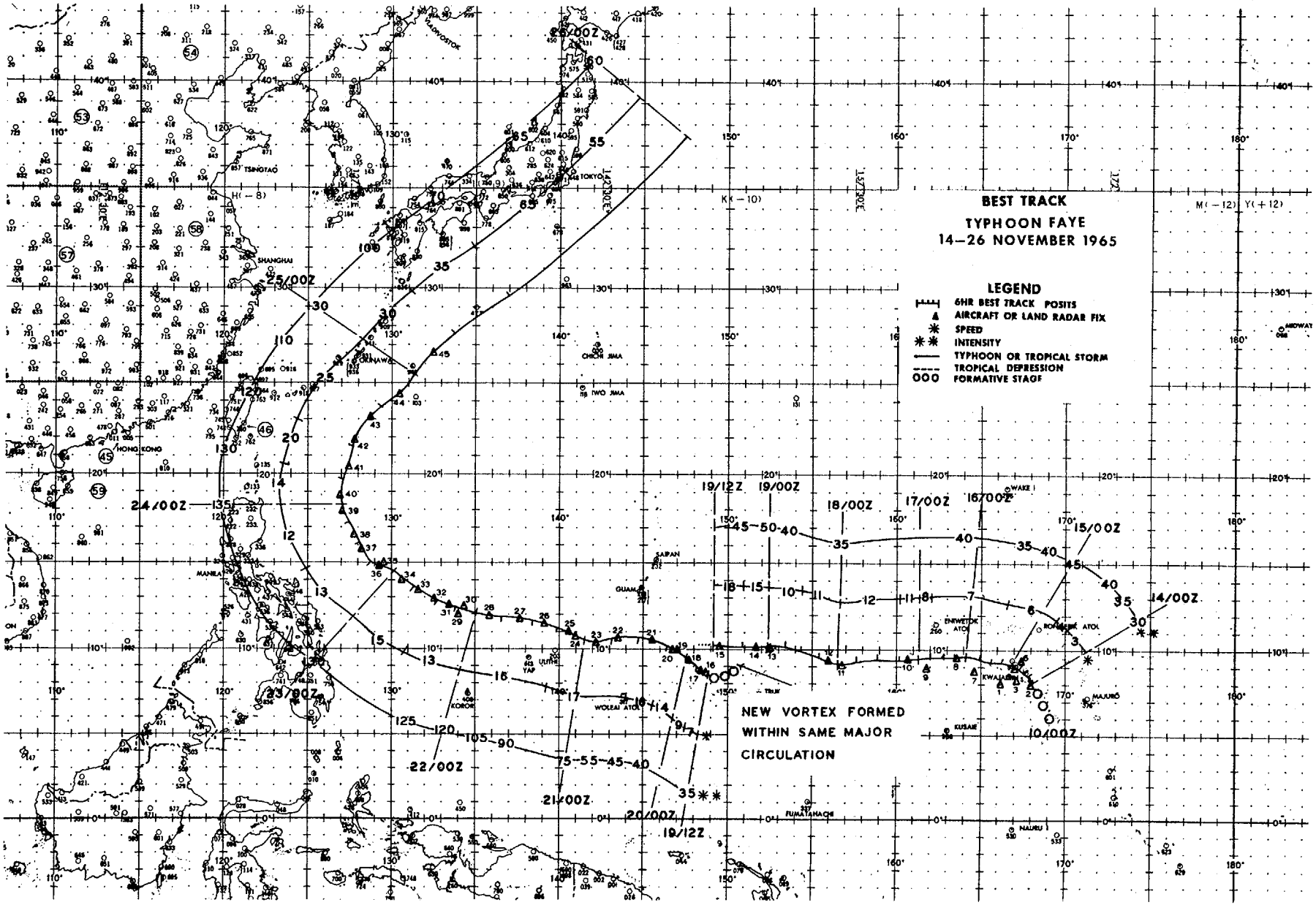
1. Junction vortex at 100000Z
2. Surface pressure less than 1008mbs

C. 200mb flow above surface vortex

1. Initial - north
2. Upon reaching typhoon intensity - northeast

III. FINAL DISPOSITION

A. Became extratropical


BEST TRACK
TYPHOON FAYE
14–26 NOVEMBER 1965
LEGEND
6HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
NEW VORTEX FORMED
WITHIN SAME MAJOR
CIRCULATION
26/00Z
25/00Z
24/00Z
23/00Z
22/00Z
21/00Z
20/00Z
19/12Z
19/00Z
18/00Z
17/00Z
16/00Z
15/00Z
14/00Z
10/00Z
TOKYO
SHANGHAI
HONG KONG
MANILA
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
WAKE I
KWAJALEIN
MAJURO
KUSAIE
NAURU
FUMATAHACHI
KOROR
ULITHI
YAP
WOLEAI ATOL
ENIWETOK ATOL
RONGERIK ATOL
MIDWAY

EYE FIXES TYPHOON FAYE

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
1	120208Z	08.0N 166.2E	SA-16	--	--	25	--	---	--/--	TRUST TERRITORIES ACFT
2	130445Z	07.9N 168.0E	54-P-P1	950mb	15	30	1001	---	24/--	MAX WND IN BND 20 TO 25 MI WIDE S QUAD
3	132315Z	08.2N 167.2E	54-P-P1	950mb	30	35	1003	---	--/--	CIRCN WEAK E & W, STRONG N & S
4	140300Z	08.1N 167.9E	54-P-P1	700mb	20	40	1001	3085	12/--	MAX WND TO S IN SHARP BND
5	142100Z	08.9N 167.0E	54-P-P3	1500ft	--	30	1002	---	24/--	FDR BNDS W & S. CNTR CIRC 10 MI DIA
6	150225Z	09.3N 167.4E	54-P-FØ	1500ft	--	25	998	---	25/--	CNTR CIRC 30 MI DIA
7	152100Z	08.7N 164.6E	54-P-F3	1500ft	30	25	1004	---	24/--	LARGE CIRCN. MAX WNDS 100 MI N OF CNTR. CNTR CIRC 40 MI DIA
8	160321Z	09.5N 163.6E	54-P-P3	1500ft	40	40	1004	---	24/--	CNTR OVAL NE-SW 40 X 100 MI
9	162130Z	08.9N 161.8E	54-P-F7	1500ft	32	32	1007	---	24/--	PRESS CNTR IN S EDGE OF LARGE CIRCN
10	170208Z	09.4N 160.7E	54-P-P3	1500ft	38	38	1004	---	25/--	CURVING BND OF BUILD-UP S & W CNTR CIRC 8 MI DIA
11	172130Z	09.1N 156.7E	54-P-F5	1500ft	10	30	1006	---	23/--	CNTR CIRC 100 MI DIA
12	180250Z	09.3N 156.0E	54-P-P3	1500ft	25	25	1003	---	24/--	CNTR CIRC 75 MI DIA
13	182125Z	10.1N 152.5E	54-P-P5	1500ft	30	35	1004	---	25/--	NO FDR BNDS

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
14	190255Z	10.1N 151.7 E	54-P-P5	1500ft	50	40	1001	---	26/--	ALL SFC WNDS CONVERGE ON CONFUSED CNTR NO CALM AREA
15	190915Z	10.2N 149.5E	VW1-P-F10	964mb	48	40	1000	---	22/18	RDR CNTR 30 MI S RPTD CNTR CNTR CIRC 55 MI DIA
16	191145Z	08.6N 148.7E	VW1-R-U	---	--	--	---	---	--/--	TIGHT RDR EYE FRMG
17	191445Z	08.7N 148.4E	VW1-P-P10	962mb	--	--	999	---	24/22	HVY BNDG SSE THRU NE CNTR TO N FLG
18	192120Z	09.3N 147.7E	54-P-F5	1500ft	35	35	1003	---	23/--	CNTR IS BROAD CALM AREA 55 MI NW-SE
19	200144Z	10.0N 147.0E	TIROS	---	--	--	---	---	--/--	STAGE X, DIA 3, BNDS 1
20	200315Z	09.9N 146.7E	54-P-P3	1500ft	40	40	999	---	24/--	CNTR CIRC 20 MI DIA
21	200900Z	10.5N 145.5E	VW1-P-P10	1500ft	--	45	998	---	--/--	STM WK BUT FDR BNDS ALL QUADS
22	201508Z	10.6N 143.5E	VW1-P-P5	700mb	55	--	995	3063	11/4	CNTR CIRC 13 MI DIA
23	202110Z	10.3N 142.2E	54-P-P5	700mb	75	65	987	2984	13/--	FDR BNDS ALL QUADS CNTR CIRC 5 MI DIA
24	210215Z	10.8N 141.0E	TIROS	---	--	--	---	---	--/--	STAGE X, DIA 2½, BNDS 3
25	210325Z	11.0N 140.5E	54-P-P5	700mb	75	75	986	2966	13/--	CNTR CIRC 5 MI DIA. WALL CLDS BLDG E & S
26	210819Z	11.4N 139.1E	VW1-P-P5	944mb	--	55	975	---	24/22	CNTR CIRC 5 MI DIA NO WALL CLDS

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
27	211440Z	11.7N 137.6E	VW1-R-P5	700mb	--	--	---	---	--/--	CNTR CIRC 10 MI DIA
28	212121Z	11.9N 135.8E	54-P-P3	700mb	75	120	952	2691	19/--	EYE CIRC 10 MI DIA WALL CLD ALL QUADS
29	220237Z	12.0N 134.0E	TIROS	---	--	--	--	---	--/--	STAGE X, DIA 6, BNDS 4
30	220322Z	12.4N 134.3E	54-P-P3	700mb	62	130	951	2698	23/--	EYE CIRC 18 MI DIA
31	220835Z	12.6N 133.4E	VW1-P-P5	684mb	92	130	--	2573	15/13	EYE CIRC 10 MI DIA
32	221225Z	12.9N 132.5E	VW1-R-U	---	--	--	--	---	--/--	
33	221420Z	13.4N 131.6E	VW1-R-P5	700mb	--	--	--	---	--/--	EYE CIRC 10 MI DIA
34	222100Z	14.0N 130.6E	54-P-P5	700mb	115	--	936	2579	16/--	EYE CIRC 30 MI DIA SMALL INNER EYE FRMG
35	230157Z	15.0N 129.5E	TIROS	---	--	--	--	---	--/--	STAGE X, DIA 7, BNDS 4 EYE VSBL
36	230235Z	14.8N 129.3E	54-P-P5	700mb	110	130	932	2521	20/--	EYE CIRC 20 MI DIA RDR EYE 8 MI N SFC CNTR
37	230945Z	15.8N 128.2E	VW1-P-P5	714mb	54	90	--	2324	23/17	EYE CIRC 20 MI DIA
38	231430Z	16.6N 127.8E	VW1-P-P5	713mb	95	--	--	2395	22/16	COUNTER-CLOCKWISE LOOP BTN 1100Z AND 1330Z
39	232142Z	17.9N 127.1E	54-P-P2	700mb	--	140	925	2445	17/--	EYE OVAL NNE-SSW 25 X 20
40	240217Z	18.8N 126.9E	54-P-P4	700mb	--	150	932	2506	19/--	EYE CIRC 20 MI DIA
41	240850Z	20.4N 127.4E	VW1-P-P5	711mb	80	130	--	2579	20/13	RDR EYE CIRC 35 MI DIA WND EYE 12 MI DIA

FIX NO.	TIME	POSIT	UNIT-METHOD-ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TT/TD	REMARKS
42	241230Z	21.9N 127.8E	VW1-R-U	--	--	--	--	---	--/--	EYE DIA 45 MI
43	241645Z	23.2N 128.7E	VW1-R-P15	--	--	--	--	---	--/--	EYE CIRC 28 MI DIA
44	242100Z	24.4N 130.4E	54-P-P3	700mb	75	--	950	2640	16/--	EYE CIRC 20 MI DIA
45	250330Z	26.6N 132.5E	54-P-P5	700mb	100	130	960	2731	21/--	NO FDR BNDS, WALL CLD WK N QUAD ONLY

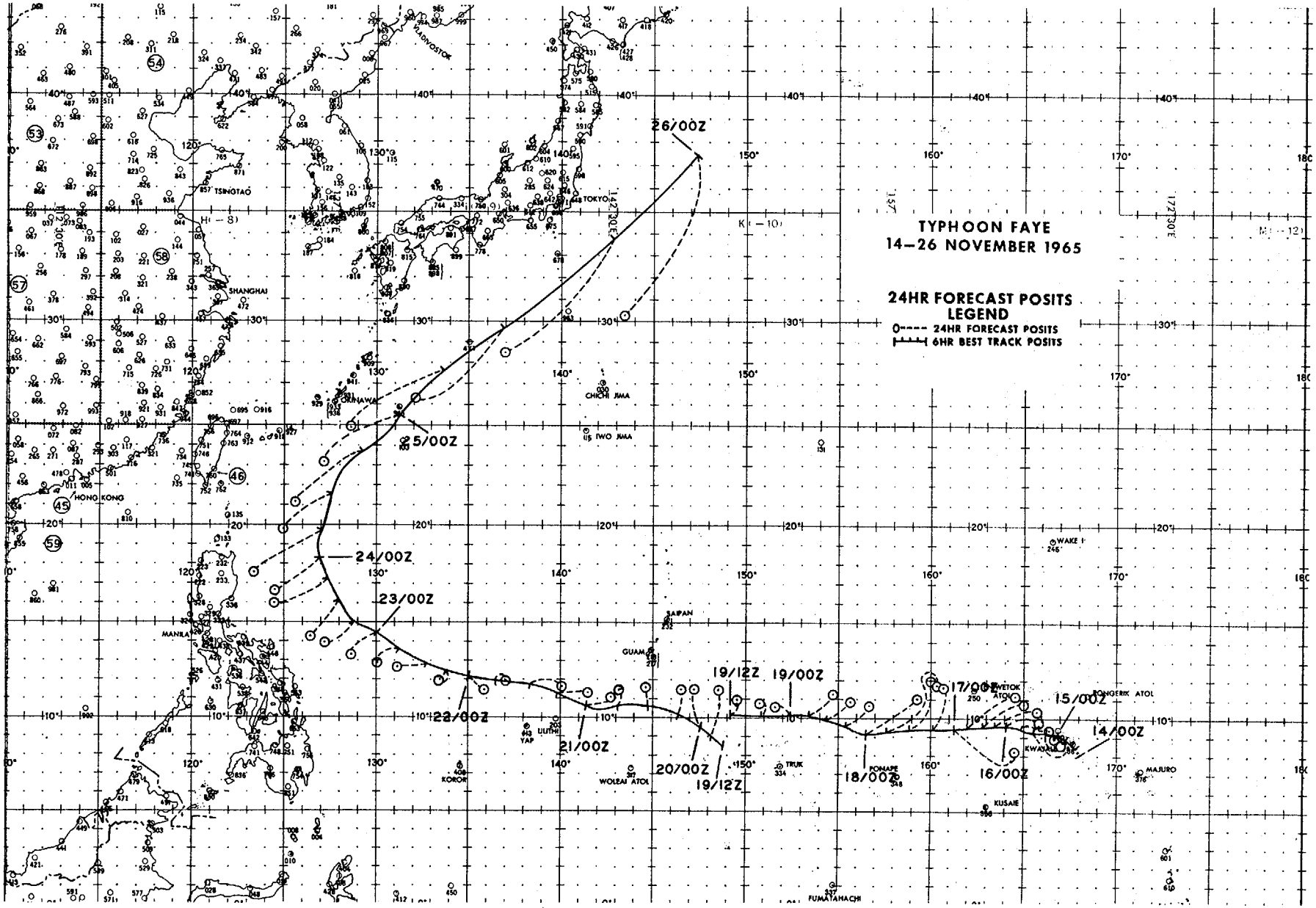
TYPHOON FAYE 14 NOV-26 NOV 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
140000Z	08.1N	168.1E	------	------
140600Z	08.4N	167.8E	------	------
141200Z	08.6N	167.6E	------	------
141800Z	08.8N	167.3E	------	------
150000Z	09.1N	166.8E	------	------
150600Z	09.2N	166.2E	117-60	------
151200Z	09.2N	165.5E	102-72	------
151800Z	09.4N	164.9E	98-86	------
160000Z	09.5N	164.2E	87-103	------
160600Z	09.6N	163.5E	73-147	042-75
161200Z	09.5N	162.8E	59-153	073-128
161800Z	09.4N	162.0E	54-180	075-165
170000Z	09.4N	161.3E	112-205	068-195
170600Z	09.4N	160.1E	16-135	065-274
171200Z	09.4N	158.9E	23-166	048-275
171800Z	09.2N	157.7E	45-222	048-307
180000Z	09.2N	156.5E	56-195	083-393
180600Z	09.5N	155.4E	50-105	035-244
181200Z	09.8N	154.3E	53-106	039-251
181800Z	10.1N	153.4E	53-106	047-271
190000Z	10.1N	152.4E	295-58	053-235
190600Z	10.1N	150.9E	345-33	048-148
191200Z	10.2N	149.2E	27-55	055-201
191800Z	08.9N	148.1E	09-151	041-265
200000Z	09.4N	147.5E	352-118	346-143
200600Z	10.2N	146.3E	09-78	358-108
201200Z	10.6N	144.8E	357-60	009-98
201800Z	10.5N	143.1E	02-57	019-136
210000Z	10.5N	141.4E	70-92	030-135
210600Z	11.3N	139.9E	90-99	055-135
211200Z	11.6N	138.4E	92-106	056-111
211800Z	11.8N	136.7E	083-24	070-105
220000Z	12.1N	135.1E	130-67	095-168
220600Z	12.5N	133.9E	225-39	100-165
221200Z	12.7N	132.7E	263-85	102-159
221800Z	13.5N	131.3E	240-78	061-21

TYPHOON FAYE 14 NOV-26 NOV 1965
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HOUR ERROR DEG. DISTANCE	48 HOUR ERROR DEG. DISTANCE
230000Z	14.4N	130.1E	229-106	168-105
230600Z	15.0N	128.8E	234-119	228-89
231200Z	16.1N	128.1E	218-145	240-130
231800Z	17.2N	127.5E	248-186	237-168
240000Z	18.3N	127.0E	233-170	242-258
240600Z	19.7N	127.1E	238-247	243-327
241200Z	21.6N	127.8E	234-191	234-415
241800Z	23.6N	129.4E	234-261	245-540
250000Z	25.5N	131.3E	238-267	238-630
250600Z	27.6N	133.8E	240-322	240-780
251200Z	29.6N	137.0E	232-325	241-604
251800Z	33.7N	142.9E	224-430	236-829
260000Z	37.4N	147.6E	206-490	231-935

AVERAGE 24 HOUR ERROR 148 MI
AVERAGE 48 HOUR ERROR 268 MI


TYPHOON FAYE
14–26 NOVEMBER 1965
24HR FORECAST POSITS
LEGEND
24HR FORECAST POSITS
6HR BEST TRACK POSITS
26/00Z
25/00Z
24/00Z
23/00Z
22/00Z
21/00Z
20/00Z
19/12Z
19/00Z
18/00Z
17/00Z
16/00Z
15/00Z
14/00Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIPAN
GUAM
WAKE I
WETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
KUSAIE
PONAPE
TRUK
WOLEAI ATOL
KOROR
ULITHI
YAP
FUMATAHACHI