CHAPTER IV

INDIVIDUAL TYPHOONS

OF 1962

TYPHOON GEORGIA - 161200Z-240000Z APRIL 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 7½

2. Calendar days of typhoon intensity - 5 3/4

3. Total distance traveled during tropical warning period - 2472 MI

B. Characteristics as a typhoon

1. Min observed SLP - 936mb, 210347Z

2. Min observed 850mb height - 3090 ft, 210347Z

3. Min observed 700mb height - 8210 ft, 201615Z

4. Max vertical development - 35,000 ft, 201200Z

II. DEVELOPMENT

A. Initial impetus - Large surge from Southern Hemisphere outdraft in easterlies

B. Initial surface vortex

1. Junction vortex at 131800Z

2. Surface pressure less than 1007mb

3. Maximum surface wind - 15 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SW quadrant of anticyclone

2. Wind velocity over vortex - 160/25 kts

III. STEERING

A. Prior to recurvature - 500mb

B. During recurvature - 300mb

C. After recurvature - 500mb

IV. DISSIPATION

A. Causative factor - Cold air

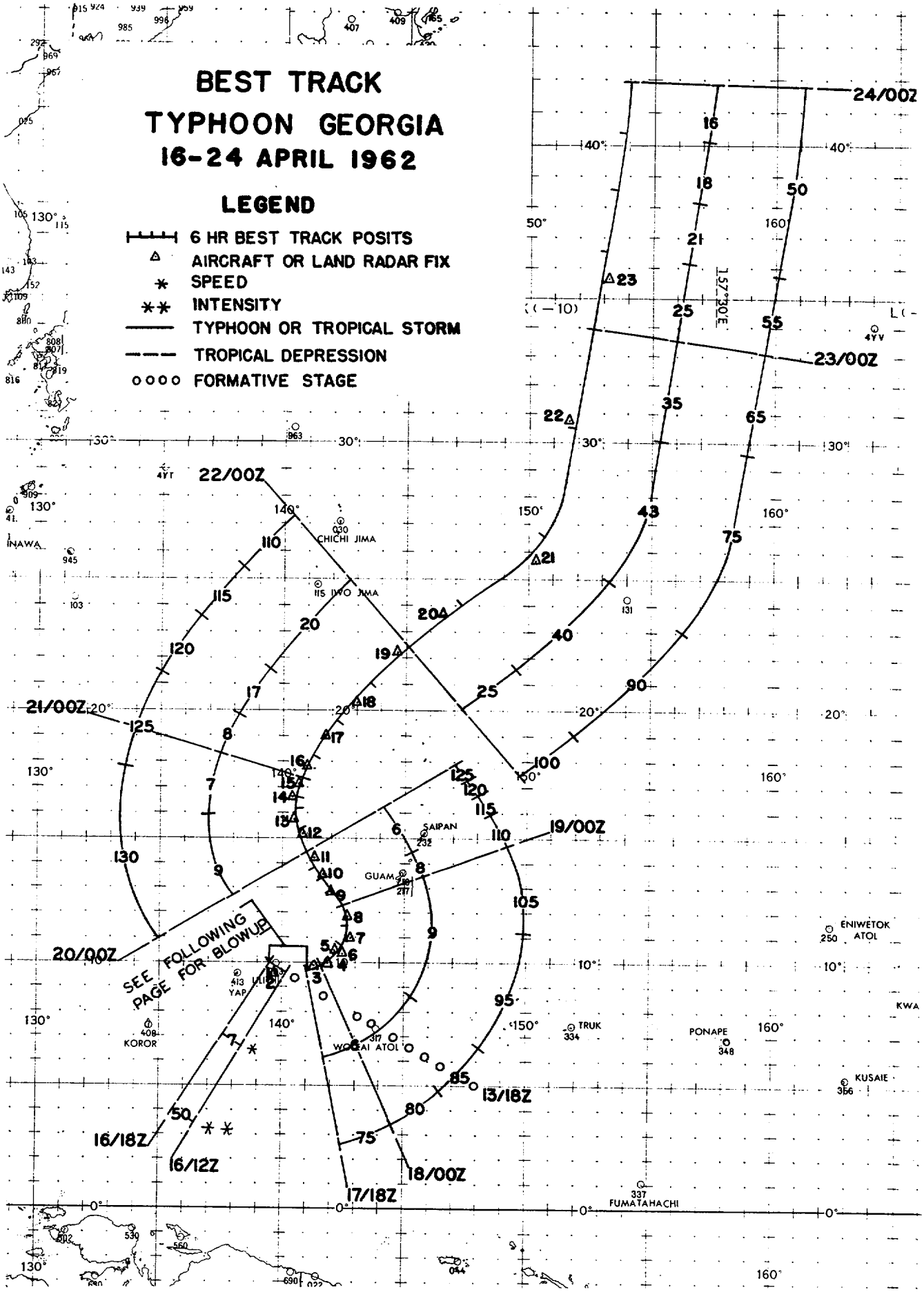
B. Final disposition - Extratropical

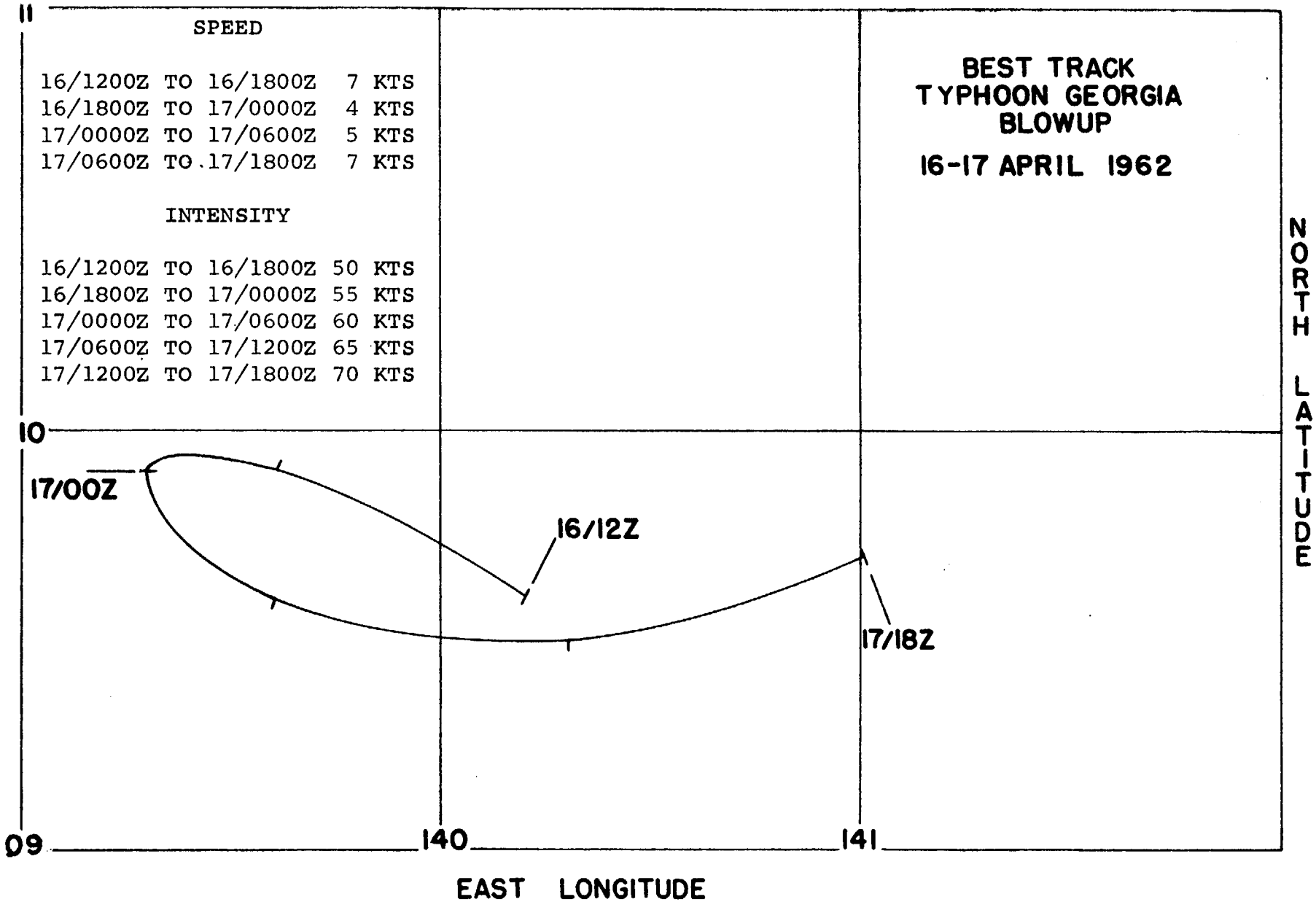
V. DAMAGE

A. Total lives lost - None reported

B. Total monetary value - $28,000

C. Types of property - Ship and its cargo


BEST TRACK
TYPHOON GEORGIA
16-24 APRIL 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
24/00Z
23/00Z
22/00Z
21/00Z
20/00Z
19/00Z
16/18Z
16/12Z
17/18Z
18/00Z
13/18Z
157°30'E
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
YAP
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
KUSAIE
FUMATAHACHI
SEE FOLLOWING PAGE FOR BLOWUP


SPEED
16/1200Z TO 16/1800Z 7 KTS
16/1800Z TO 17/0000Z 4 KTS
17/0000Z TO 17/0600Z 5 KTS
17/0600Z TO 17/1800Z 7 KTS
INTENSITY
16/1200Z TO 16/1800Z 50 KTS
16/1800Z TO 17/0000Z 55 KTS
17/0000Z TO 17/0600Z 60 KTS
17/0600Z TO 17/1200Z 65 KTS
17/1200Z TO 17/1800Z 70 KTS
BEST TRACK
TYPHOON GEORGIA
BLOWUP
16-17 APRIL 1962
11
10
09
140
141
17/00Z
16/12Z
17/18Z
NORTH LATITUDE
EAST LONGITUDE

LAND RADAR AND AIRCRAFT FIXES - TYPHOON GEORGIA

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	170201Z	09.8N	139.4E	VW1-P-05	55	-	-	985	- -	OPEN SE
2	170525Z	09.6N	139.6E	VW1-P-01	30	-	9768	982	16/-	DIA 30 MI,OPEN SE
3	172245Z	09.9N	141.4E	56-P-01	50	35	9730	988	21/15	CIRC 50 MI DIA,OPEN SE
4	180415Z	10.0N	141.8E	54-P-03	60	50	9480	994	17/15	ELLIP 30X20 MI
5	180708Z	10.3N	142.1E	54-P-05	80	63	9490	972	17/15	ELLIP 30X20 MI,OPEN N & NE
6	181030Z	10.3N	142.4E	VW1-R-02	-	-	-	-	- -	ELLIP 22 MI N-S & 32 MI E-W
7	181630Z	11.0N	142.8E	VW1-R-02	-	-	-	-	- -	DIA 24 MI
8	182200Z	11.8N	142.6E	54-P-05	80	-	8880	953	22/10	CIRC 25 MI DIA
9	190550Z	12.9N	142.0E	VW1-R-05	-	-	-	-	- -	WELL DEFINED
10	191400Z	13.6N	141.6E	LND/RDR	-	-	-	-	- -	---
11	192230Z	14.3N	141.2E	54-P-05	90	70	9150	965	16/13	CIRC 12 MI DIA
12	200425Z	15.1N	140.9E	54-P-05	110	105	8300	966	17/08	DIA 18 MI
13	201025Z	15.8N	140.5E	VW1-R-02	-	-	-	-	- -	DIA 30 MI
14	201615Z	16.6N	140.4E	VW1-P-01	-	-	8210	-	- -	DIA 26 MI
15	202213Z	17.2N	140.6E	54-P-02	90	105	8420	942	17/17	DIA 20 MI
16	210347Z	17.8N	141.0E	54-P-½	80	120	8400	936	19/15	ELLIP 38 MI E-W & 31 MI N-S
17	210925Z	19.0N	141.8E	VW1-R-05	-	-	-	-	- -	---

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

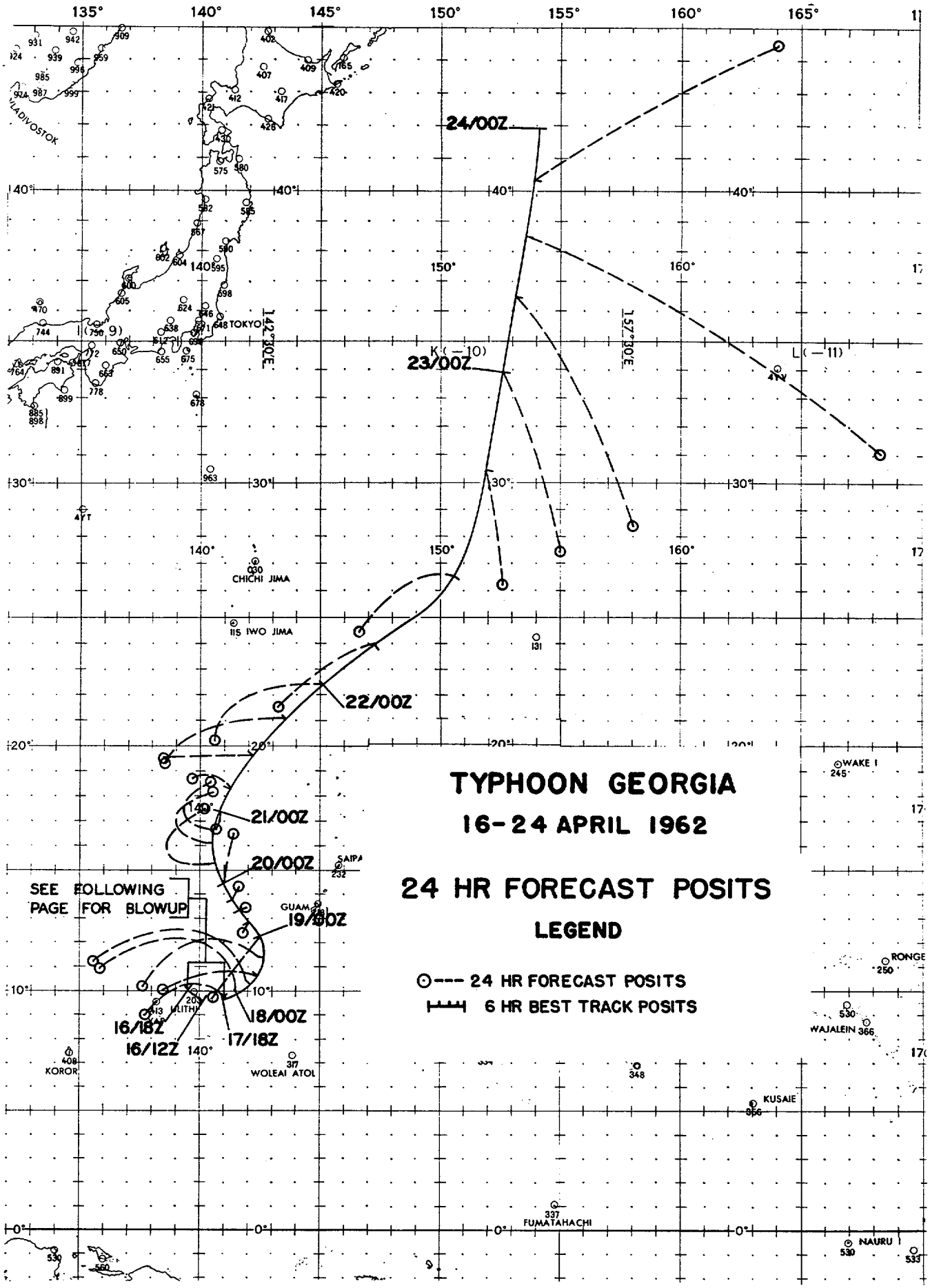
FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
18	211525Z	20.3N	143.0E	VW1-R-05	-	-	-	-	- -	DIA 36 MI, WEAK SW-NW
19	212251Z	22.2N	144.6E	54-P-05	80	100	8840	952	21/13	CIRC 35 MI DIA, OPEN E, S & W
20	220431Z	23.6N	146.5E	54-P-05	80	80	8960	956	17/13	NOT WELL DEFINED, DIA 60 MI
21	221053Z	25.8N	150.2E	VW1-R-10	-	-	-	-	- -	POOR DEFINED, DIA 40 MI
22	221812Z	30.7N	151.7E	VW1-R-10	-	-	-	-	- -	DIFFUSE 40 MI DIA
23	230345Z	35.6N	153.1E	54-P-03	50	50	9350	979	14/09	ELLIP ENE-WSW

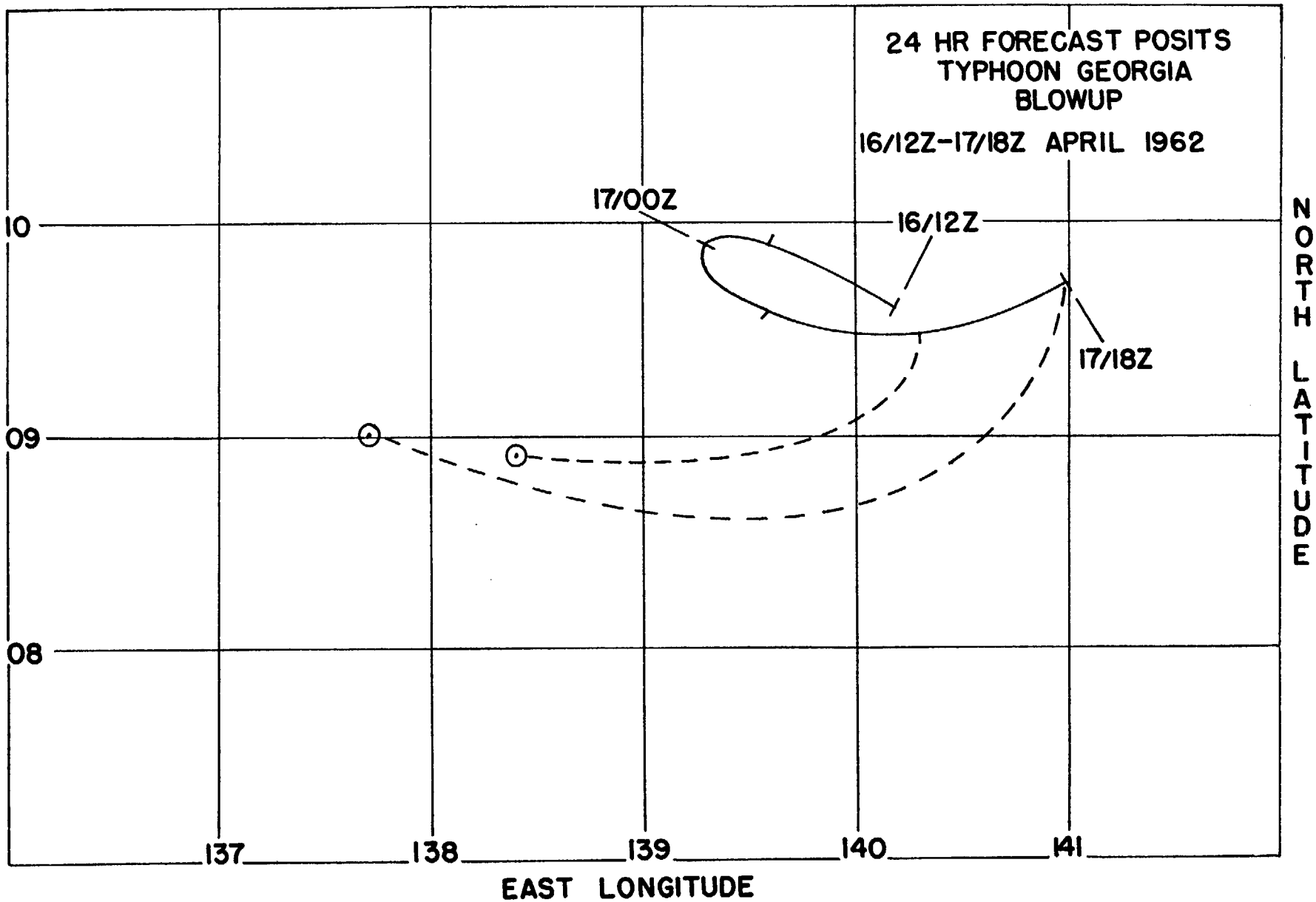
TYPHOON GEORGIA 16-24 APR 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
161200Z	09.6N	140.2E	------	------
161800Z	09.9N	139.6E	------	------
170000Z	09.9N	139.3E	------	------
170600Z	09.6N	139.6E	------	------
171200Z	09.5N	140.3E	------	------
171800Z	09.7N	141.0E	------	------
180000Z	09.8N	141.6E	282-336	------
180600Z	10.1N	142.1E	279-399	------
181200Z	10.5N	142.5E	263-253	------
181800Z	11.3N	142.8E	258-316	------
190000Z	12.2N	142.4E	220-189	271-609
190600Z	12.9N	142.1E	204-31	269-671
191200Z	13.4N	141.7E	090-12	249-399
191800Z	13.9N	141.3E	034-29	250-438
200000Z	14.4N	141.1E	005-125	225-309
200600Z	15.2N	140.6E	348-135	113-75
201200Z	16.1N	140.3E	003-124	019-71
201800Z	16.7N	140.5E	358-104	360-80
210000Z	17.4N	140.8E	200-34	357-289
210600Z	18.1N	141.2E	299-88	359-303
211200Z	19.5N	142.2E	270-218	352-260
211800Z	21.0N	143.6E	252-306	339-215
220000Z	22.4N	145.0E	241-286	236-349
220600Z	24.0N	147.1E	237-269	252-775
221200Z	26.4N	150.6E	244-242	248-737
221800Z	30.6N	151.8E	172-259	241-1080
230000Z	34.0N	152.6E	162-410	223-699
230600Z	36.5N	153.1E	153-550	194-651
231200Z	38.5N	153.6E	122-880	175-525
231800Z	40.3N	153.9E	060-534	126-945
240000Z	41.9N	154.0E	063-613	129-1030

TYPHOON GEORGIA 16-24 APR 1962
POSITION AND FORECAST VERIFICATION DATA (CONT'D)

AVERAGE 24 HOUR ERROR 269.7 MI
AVERAGE 48 HOUR ERROR 500.5 MI


TYPHOON GEORGIA
16-24 APRIL 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
SEE FOLLOWING PAGE FOR BLOWUP
24/00Z
23/00Z
22/00Z
21/00Z
20/00Z
19/00Z
18/00Z
17/18Z
16/18Z
16/12Z
142°30'E
157°30'E
TOKYO
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
WAKE I
RONGE
WAJALEIN
KOROR
WOLEAI ATOL
KUSAIE
FUMATAHACHI
NAURU
VLADIVOSTOK


24 HR FORECAST POSITS
TYPHOON GEORGIA
BLOWUP
16/12Z-17/18Z APRIL 1962
17/00Z
16/12Z
17/18Z
10
09
08
137
138
139
140
141
EAST LONGITUDE
NORTH LATITUDE

TYPHOON HOPE - 160600Z-221200Z MAY 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 6¼

2. Calendar days of typhoon intensity - 1 3/4

3. Total distance traveled during tropical warning period - 1566 MI

B. Characteristics as a typhoon

1. Min observed SLP - 978mb, 202247Z

2. Min observed 850mb height - 4285 ft, 202247Z

3. Min observed 700mb height - 9530 ft, 202247Z

4. Max vertical development - 25,000 ft, 201200Z

II. DEVELOPMENT

A. Initial impetus - Fracture after superposition of polar trough and easterly wave. Slight surge in easterlies apparently originating south of equator - noted on 200mb level.

B. Initial surface vortex

1. Junction vortex at 131800Z

2. Surface pressure less than 1007mb

3. Maximum surface wind - 10 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SW quadrant of anticyclone

2. Wind velocity over vortex - 140/15 kts

III. STEERING

A. Prior to recurvature - 500mb

B. During recurvature - 500mb

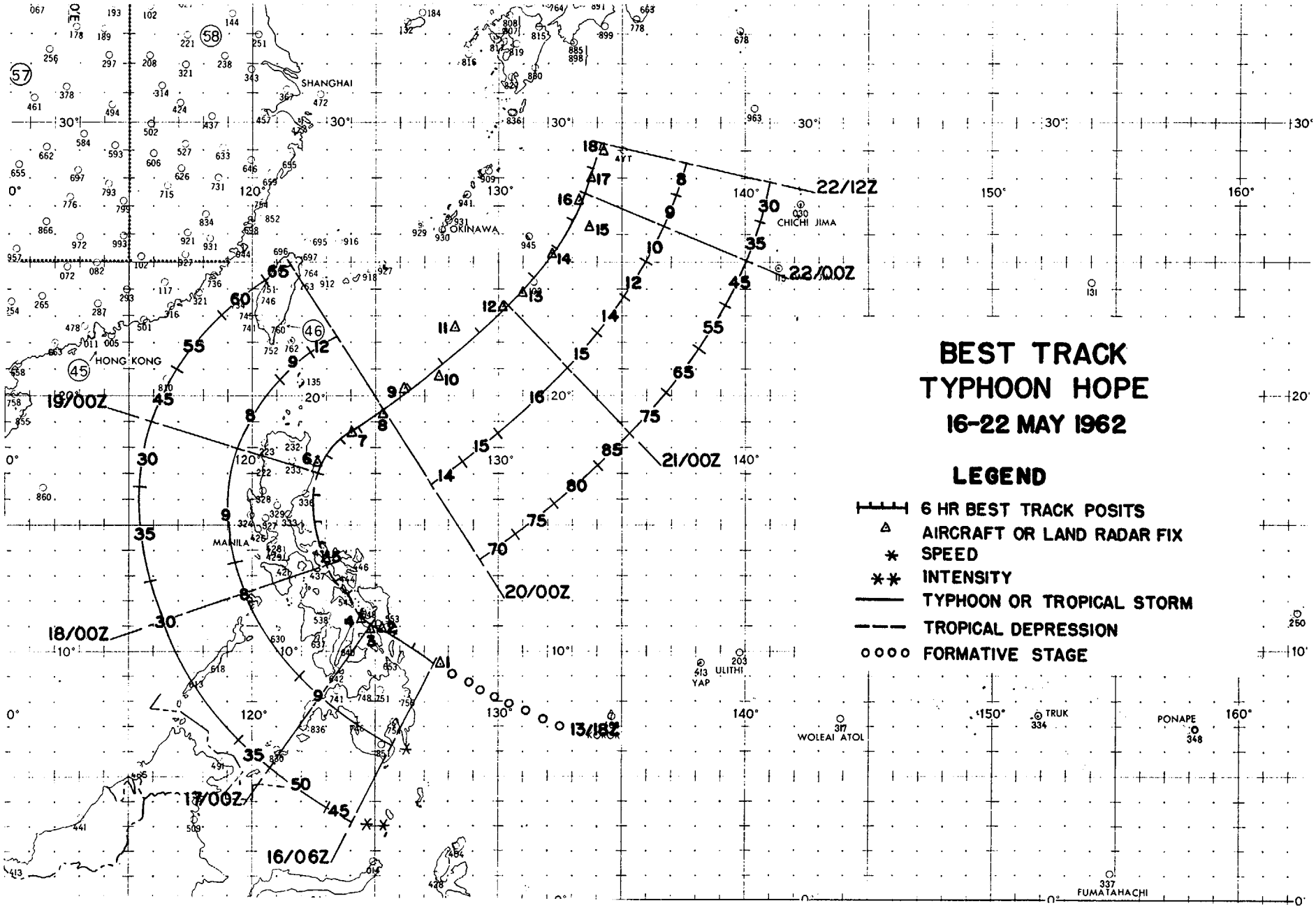
C. After recurvature - 500mb

IV. DISSIPATION

A. Causative factor - Cold air

B. Final disposition - Extratropical

V. DAMAGE - No reports received


BEST TRACK
TYPHOON HOPE
16-22 MAY 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
SHANGHAI
HONG KONG
MANILA
OKINAWA
CHICHI JIMA
YAP
ULITHI
WOLEAI ATOL
TRUK
PONAPE
FUMATAHACHI
16/06Z
17/00Z
18/00Z
19/00Z
20/00Z
21/00Z
22/00Z
22/12Z

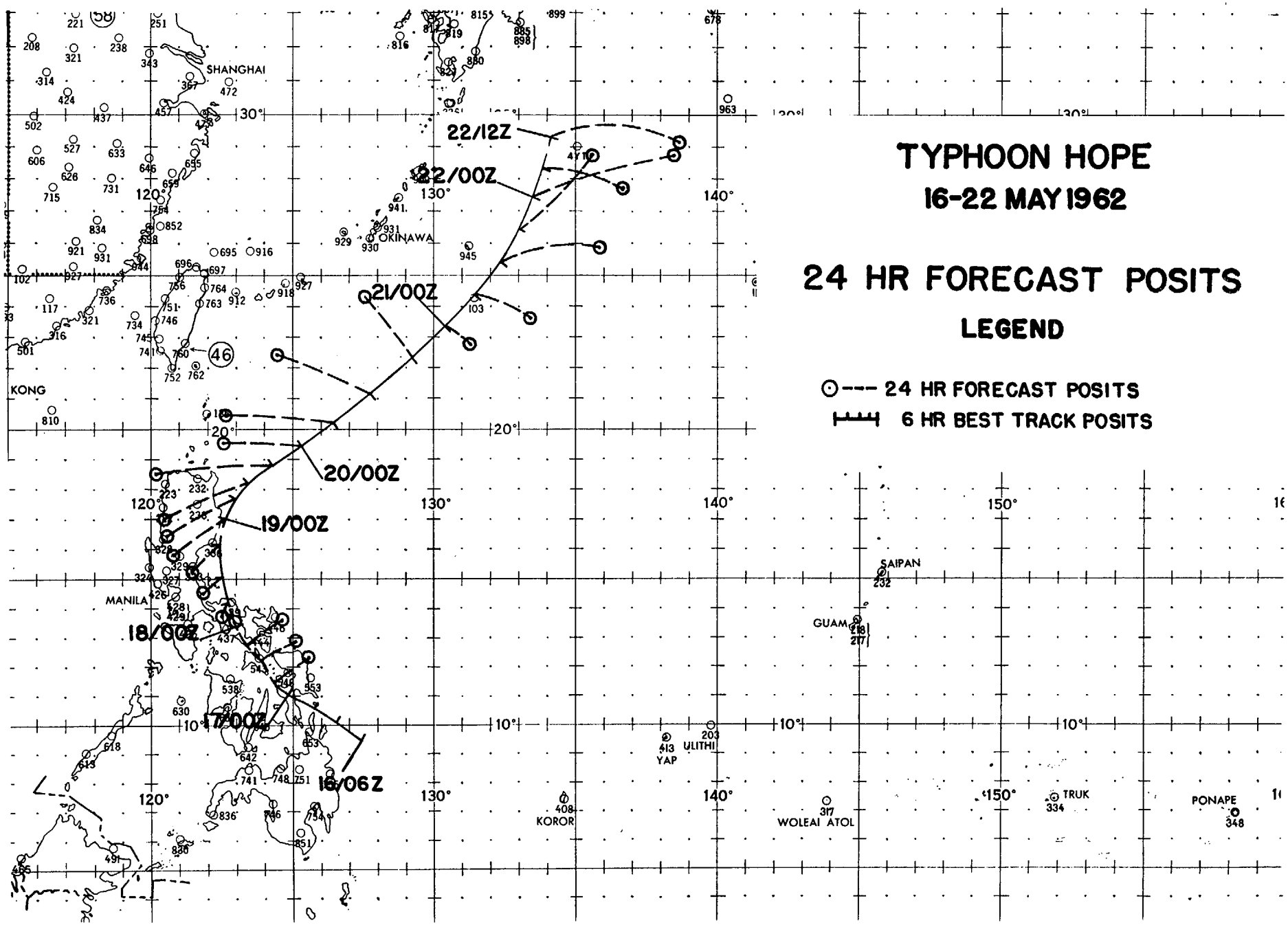
LAND RADAR AND AIRCRAFT FIXES - TYPHOON HOPE

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	160400Z	09.6N	127.7E	54-P-05	50	45	10110	1007	10/05	CIRC 40 MI DIA,WALL CLDS NW & SE
2	162155Z	10.9N	125.2E	VW1-R-3	-	-	-	-	- -	---
3	162336Z	10.9N	124.7E	VW1-P-10	-	-	-	-	- -	---
4	170405Z	11.3N	124.3E	VW1-P-02	55	-	-	-	- -	DIA 15 MI,NO WALL CLDS
5	180100Z	13.8N	123.0E	USN-R-U	-	-	-	-	- -	DIA 21 MI,WEAK/DIFFUSED
6	190235Z	17.4N	122.7E	VW1-P-01	50	-	-	983	- -	DIA 5 MI
7	191600Z	18.6N	124.0E	USAF-R-U	-	-	-	-	- -	---
8	192307Z	19.3N	125.3E	VW1-P-05	65	-	-	980	- -	DIA 10 MI
9	200500Z	20.3N	126.2E	VW1-P-05	-	-	9850	-	- -	CIRC 20 MI DIA,BECOMING DIFFUSE
10	201006Z	20.7N	127.6E	VW1-P-03	60	-	-	979	- -	DIA 8 MI,OPEN SW
11	201600Z	22.5N	128.2E	VW1-R-03	-	-	-	-	- -	DIA 16 MI, OPEN S
12	202247Z	23.2N	130.1E	54-P-03	85	90	9530	978	20/15	CIRC 30 MI DIA
13	210400Z	23.9N	131.0E	54-P-05	70	55	9610	983	17/14	DIA 30 MI,OPEN SE-SW
14	211040Z	25.3N	132.2E	VW1-P-03	60	-	-	988	- -	---
15	211630Z	26.2N	133.7E	VW1-R-10	-	-	-	-	- -	VERY POORLY DEFINED
16	212210Z	27.1N	133.2E	54-P-02	45	38	10180	1002	14/09	VERY POORLY DEFINED
17	220401Z	28.0N	133.7E	54-P-02	35	40	10200	1008	10/05	VERY POORLY DEFINED
18	221130Z	29.0N	134.2E	VW1-R-15	-	-	-	-	- -	LITTLE SPIRAL BAND

TYPHOON HOPE 16-22 MAY 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
160600Z	09.7N	127.4E	------	------
161200Z	10.2N	126.6E	------	------
161800Z	10.7N	125.8E	------	------
170000Z	11.0N	124.9E	------	------
170600Z	11.5N	124.2E	062-101	------
171200Z	12.3N	123.9E	068-80	------
171800Z	12.8N	123.4E	067-90	------
180000Z	13.7N	123.1E	212-30	------
180600Z	14.4N	122.9E	214-44	115-78
181200Z	15.3N	122.6E	220-64	110-70
181800Z	16.2N	122.5E	224-90	114-75
190000Z	17.2N	122.6E	240-120	212-125
190600Z	17.8N	123.0E	237-160	224-144
191200Z	18.3N	123.5E	247-195	234-200
191800Z	18.9N	124.3E	268-245	248-260
200000Z	19.4N	125.3E	275-160	254-341
200600Z	20.2N	126.7E	286-235	252-412
201200Z	21.1N	127.9E	291-212	254-526
201800Z	22.2N	129.2E	324-143	260-520
210000Z	23.4N	130.4E	119-49	265-456
210600Z	24.4N	131.4E	114-116	265-448
211200Z	25.5N	132.4E	086-192	283-160
211800Z	26.6N	133.0E	044-200	046-230
220000Z	27.5N	133.5E	074-275	113-415
220600Z	28.3N	133.8E	101-161	100-563
221200Z	29.1N	134.2E	093-245	067-667

AVERAGE 24 HOUR ERROR 145.8 MI
AVERAGE 48 HOUR ERROR 316.1 MI


TYPHOON HOPE
16-22 MAY 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
16/06Z
17/00Z
18/00Z
19/00Z
20/00Z
21/00Z
22/00Z
22/12Z
SHANGHAI
OKINAWA
MANILA
KONG
SAIPAN
GUAM
ULITHI
YAP
KOROR
WOLEAI ATOL
TRUK
PONAPE
120°
130°
140°
150°
30°
20°
10°

TYPHOON IRIS - 260600Z-300000Z MAY 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 3 3/4
2. Calendar days of typhoon intensity - ¼
3. Total distance traveled during tropical warning period - 630 MI

B. Characteristics as a typhoon

1. Min observed SLP - 991mb, 270415Z
2. Min observed 850mb height - 4775 ft, 270415Z
3. Min observed 700mb height - 10,000 ft, 270415Z
4. Max vertical development - 35,000 ft, 270415Z

II. DEVELOPMENT

A. Initial impetus - Easterly wave and polar trough fractured after superposition.

B. Initial surface vortex

1. Junction vortex at 260000Z
2. Surface pressure less than 1008mb
3. Max surface wind - 15 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SW quadrant of anticyclone
2. Wind velocity over vortex - 110/25 kts

III. STEERING

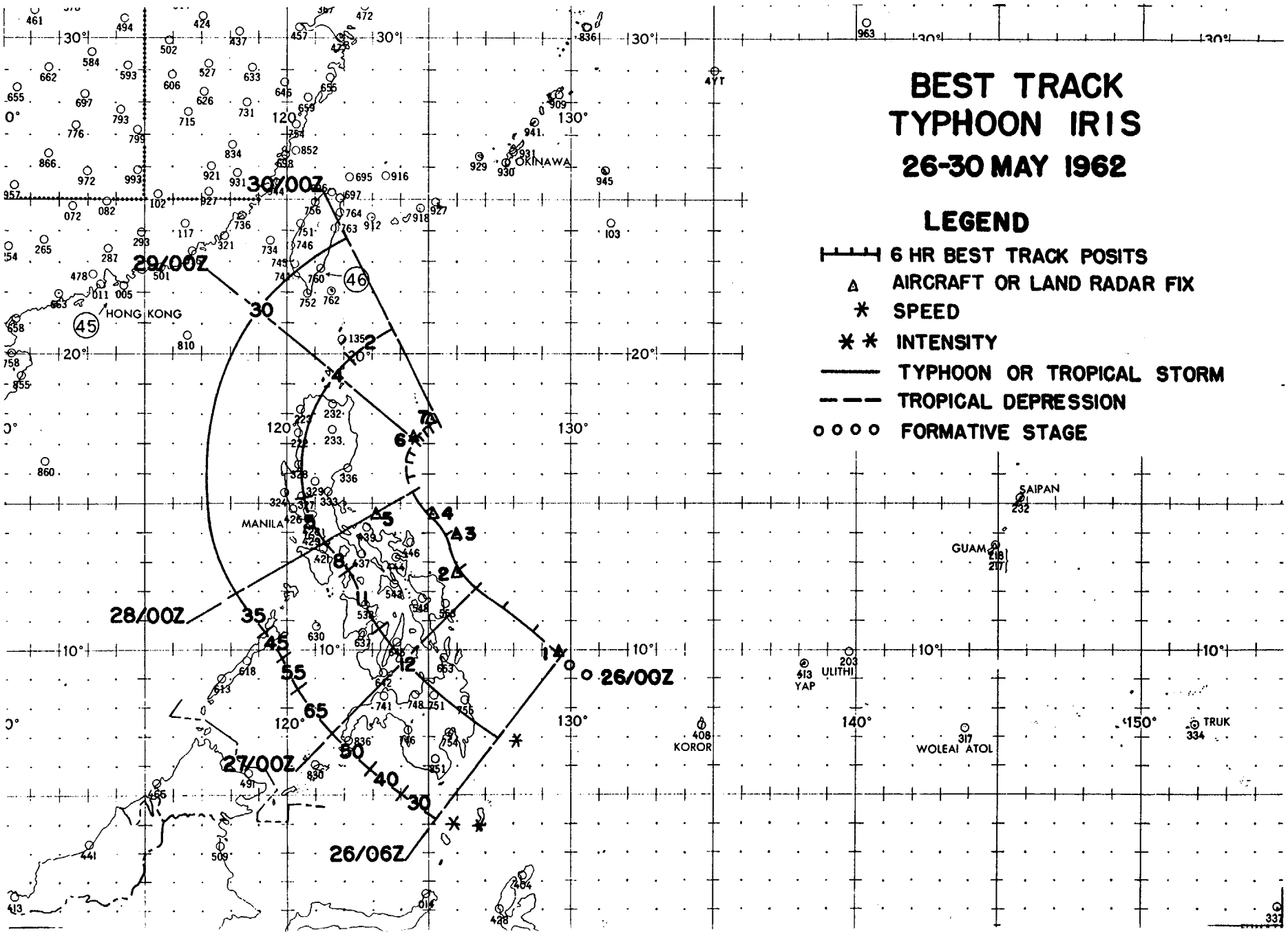
A. Prior to recurvature - 500mb
B. During recurvature - 500mb
C. After recurvature - NA

IV. DISSIPATION

A. Causative factor - Lack of upper level divergence
B. Final disposition - Dissipated

V. DAMAGE

A. Total lives lost - 5
B. Total monetary value - No estimate
C. Types of property - Crops


BEST TRACK
TYPHOON IRIS
26-30 MAY 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
HONG KONG
MANILA
OKINAWA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
29/00Z
30/00Z
28/00Z
27/00Z
26/00Z
26/06Z

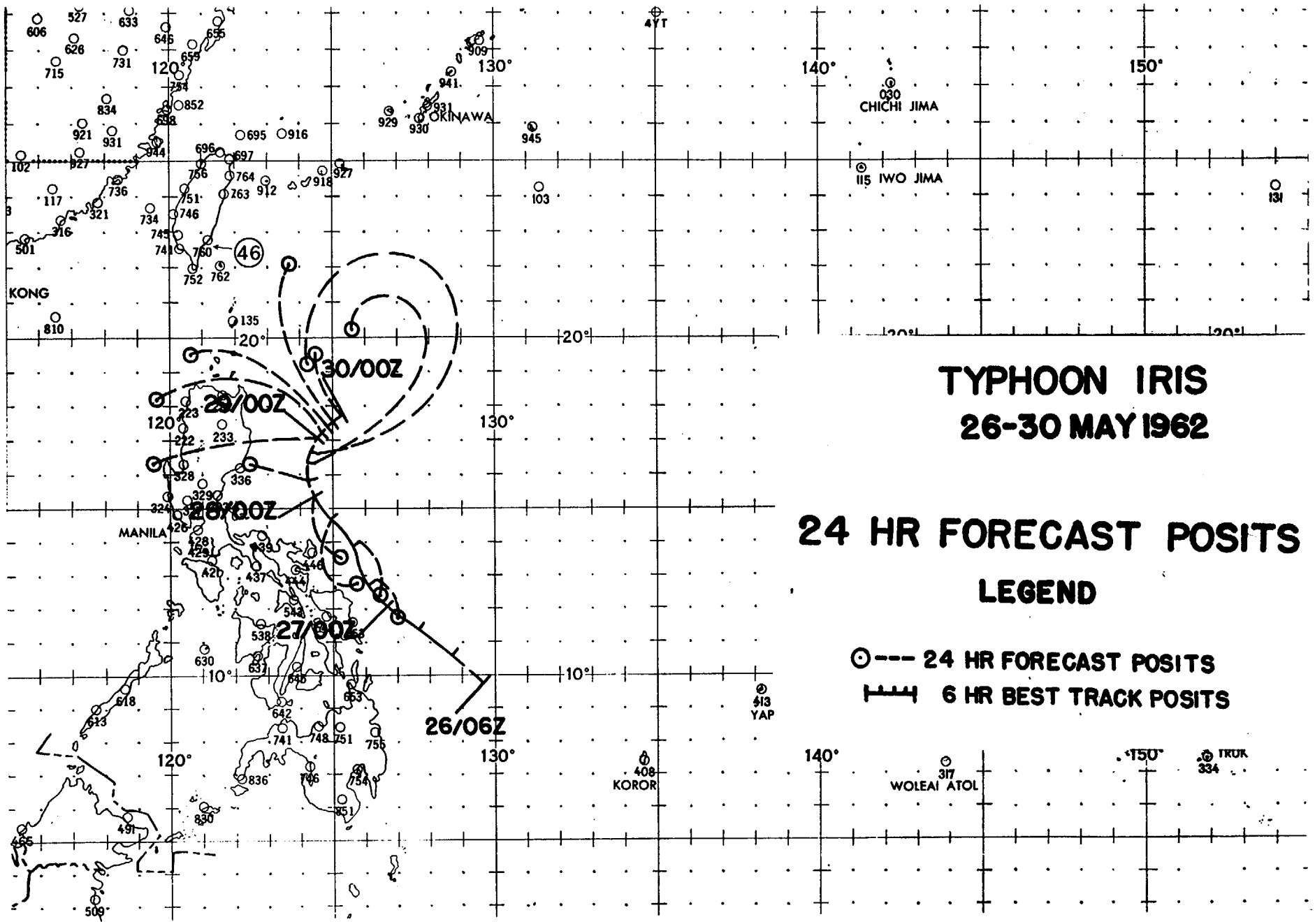
LAND RADAR AND AIRCRAFT FIXES - TYPHOON IRIS

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	260552Z	09.9N	129.7E	54-P-05	30	-	-	1001	- -	POORLY DEFINED
2	270415Z	12.6N	126.0E	54-P-04	75	55	10000	991	21/16	CIRC 25 MI DIA,WELL DEFINED,OPEN SW
3	270906Z	14.0N	126.0E	PAWA-P-U	-	-	-	-	- -	---
4	271610Z	14.6N	125.1E	VW1-P-03	-	-	10245	-	- -	NO SPIRAL BANDS
5	272232Z	14.6N	123.1E	54-P-01	35	20	10190	1007	12/12	CIRC 20 MI DIA, NOT WELL DEFINED
6	282345Z	17.1N	124.5E	VW1-P-05	25	-	-	995	- -	30 MI N-S & 10 MI E-W
7	292156Z	17.8N	125.1E	VW1-P-02	15	-	-	-	- -	OVAL NNE-SSW 70X30 MI

TYPHOON IRIS 26-30 MAY 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
260600Z	09.9N	129.7E	------	------
261200Z	10.7N	128.8E	------	------
261800Z	11.4N	127.8E	------	------
270000Z	12.1N	126.8E	------	------
270600Z	12.9N	126.0E	------	------
271200Z	14.0N	125.6E	------	------
271800Z	14.8N	124.9E	------	------
280000Z	15.4N	124.3E	------	------
280600Z	15.9N	124.2E	282-96	------
281200Z	16.3N	124.2E	021-244	------
281800Z	16.7N	124.3E	356-145	------
290000Z	17.1N	124.5E	262-297	------
290600Z	17.4N	124.7E	278-295	294-240
291200Z	17.6N	124.8E	298-268	043-586
291800Z	17.7N	125.0E	------	024-434
300000Z	17.8N	125.2E	------	285-456

AVERAGE 24 HOUR ERROR 224.2 MI
AVERAGE 48 HOUR ERROR 429 MI


TYPHOON IRIS
26-30 MAY 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
26/06Z
27/00Z
28/00Z
29/00Z
30/00Z
46
OKINAWA
CHICHI JIMA
IWO JIMA
MANILA
KONG
YAP
KOROR
WOLEAI ATOL
TRUK
120°
130°
140°
150°
20°
10°

TYPHOON JOAN - 070600Z-110600Z JULY 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 4

2. Calendar days of typhoon intensity - 1 3/4

3. Total distance traveled during tropical warning period - 1614 MI

B. Characteristics as a typhoon

1. Min observed SLP - 985mb, 081000Z

2. Min observed 850mb height - 4555 ft, 082225Z

3. Min observed 700mb height - 9770 ft, 082225Z

4. Max vertical development - 30,000 ft, 080000Z

II. DEVELOPMENT

A. Initial impetus - Easterly wave and polar trough fractured after superposition

B. Initial surface vortex

1. Embedded vortex at 061200Z, junction vortex absorbed.

2. Surface pressure less than 1006mb

3. Maximum surface wind - 15 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone

2. Wind velocity over vortex - 065/25 kts

III. STEERING

A. Prior to recurvature - 500mb

B. During recurvature - 500mb

C. After recurvature - 700mb

IV. DISSIPATION

A. Causative factor - Cold air

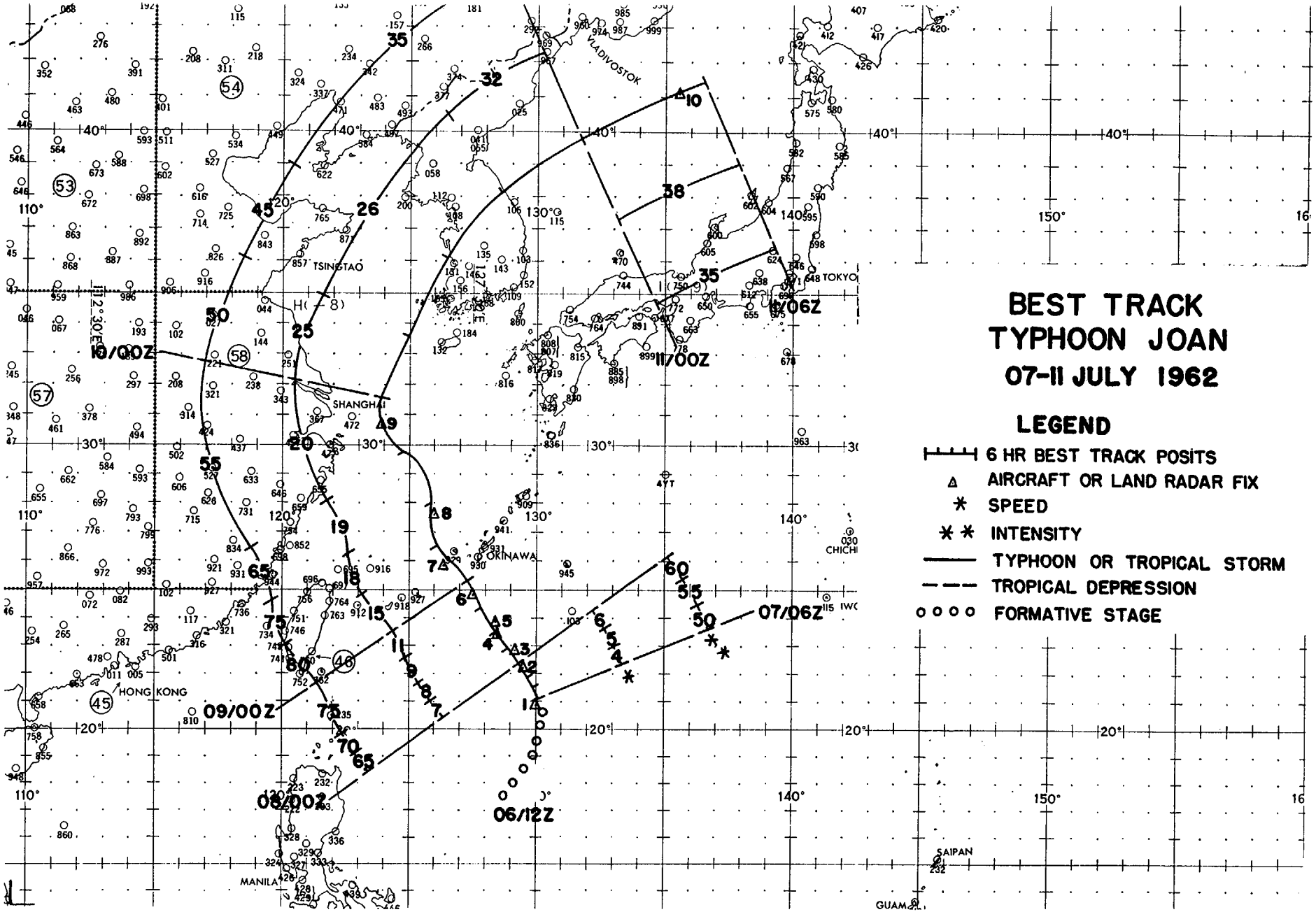
B. Final disposition - Extratropical

V. DAMAGE

A. Total lives lost - None

B. Total monetary value - $500,000

C. Types of property - Crops and communications


BEST TRACK
TYPHOON JOAN
07-11 JULY 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
VLADIVOSTOK
TSINGTAO
SHANGHAI
OKINAWA
HONG KONG
MANILA
TOKYO
SAIPAN
GUAM
10/00Z
09/00Z
08/00Z
06/12Z
11/06Z
11/00Z
07/06Z

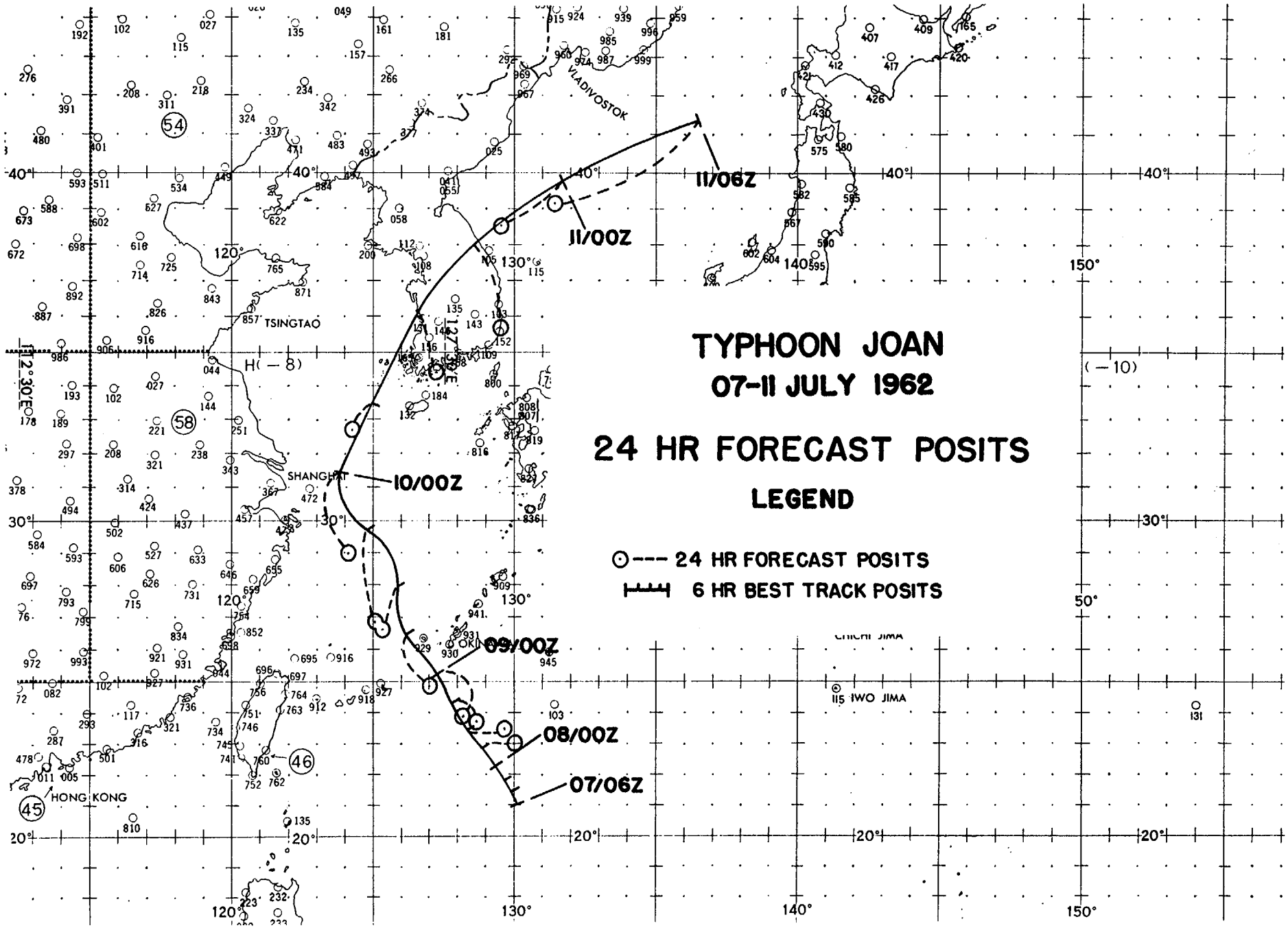
LAND RADAR AND AIRCRAFT FIXES - TYPHOON JOAN

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	070415Z	20.9N	130.0E	VW1-P-05	50	-	-	994	- -	CIRC 70 MI DIA, WEAK S & NW
2	072214Z	22.2N	129.5E	VW1-P-05	60	-	9975	985	- -	POORLY DEFINED, 40 MI DIA, OPEN W
3	080330Z	22.8N	129.1E	VW1-P-03	60	-	9870	-	- -	EYE 40 MI NW-SE & 60 MI SW-NE
4	081000Z	23.4N	128.4E	VW1-P-03	75	-	-	985	- -	CIRC 25 MI DIA, OPEN W, CLEAR IN EYE
5	081545Z	23.8N	128.4E	VW1-R-03	-	-	-	-	- -	CIRC 23 MI DIA, OPEN W & N
6	082225Z	24.8N	127.5E	54-P-04	60	50	9770	988	17/12	VERY UNORGANIZED
7	090400Z	25.8N	126.3E	54-P-02	80	75	9810	988	17/13	ELLIP WNW-ESE 60 MI LONG & 40 MI WIDE, OPEN E & S, VERY UNORGANIZED
8	091045Z	27.6N	126.0E	VW1-P-05	75	-	-	986	- -	CIRC 20 MI DIA, OPEN NW
9	092140Z	30.5N	123.9E	54-T-U	-	-	-	-	- -	POORLY DEFINED
10	110430Z	41.1N	135.4E	56-P-02	35	54	10110	997	12/05	NO WALL CLDS, 8/8 CIRC CLD PATTERN AT SFC TOPS 2000 FT

TYPHOON JOAN 07-11 JULY 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR ERROR DEG. DISTANCE	48 HR ERROR DEG. DISTANCE
070600Z	21.0N	130.0E	------	------
071200Z	21.3N	129.8E	------	------
071800Z	21.8N	129.7E	------	------
080000Z	22.4N	129.4E	------	------
080600Z	22.9N	128.9E	086-61	------
081200Z	23.5N	128.4E	095-73	------
081800Z	24.3N	127.9E	133-55	------
090000Z	25.2N	127.2E	149-94	------
090600Z	26.3N	126.0E	142-98	132-181
091200Z	28.0N	126.0E	199-96	154-228
091800Z	29.6N	124.8E	175-163	149-296
100000Z	31.3N	123.9E	178-127	158-383
100600Z	33.7N	124.9E	208-67	183-390
101200Z	36.0N	126.4E	152-106	208-330
101800Z	38.1N	128.3E	155-152	213-339
110000Z	39.8N	131.8E	232-136	227-396
110600Z	41.4N	136.3E	240-260	249-285

AVERAGE 24 HOUR ERROR 114.5 MI
AVERAGE 48 HOUR ERROR 314.2 MI


TYPHOON JOAN
07-11 JULY 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
11/06Z
11/00Z
10/00Z
09/00Z
08/00Z
07/06Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
HONG KONG
IWO JIMA
H(-8)
(-10)
112°30'E
127°30'E
40°
30°
20°
120°
130°
140°
150°
50°

TYPHOON KATE - 181200Z-240000Z JULY 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 5½

2. Calendar days of typhoon intensity - 2 3/4

3. Total distance traveled during tropical warning period - 1050 MI

B. Characteristics as a typhoon

1. Min observed SLP - 964mb, 220333Z

2. Min observed 850mb height - 3840 ft, 220333Z

3. Min observed 700mb height - 9060 ft, 220333Z

4. Max vertical development - 35,000 ft, 210000Z

II. DEVELOPMENT

A. Initial impetus - Easterly wave and polar trough fractured after superposition. Surge from westerlies into easterlies at the 200mb level.

B. Initial surface vortex

1. Junction vortex at 180000Z

2. Surface pressure less than 1004mb

3. Maximum surface wind - 10 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone

2. Wind velocity over vortex - 065/30 kts

III. STEERING

A. Prior to recurvature - 500mb

B. During recurvature - 500mb

C. After recurvature - 500mb

IV. DISSIPATION

A. Causative factor - Land strike

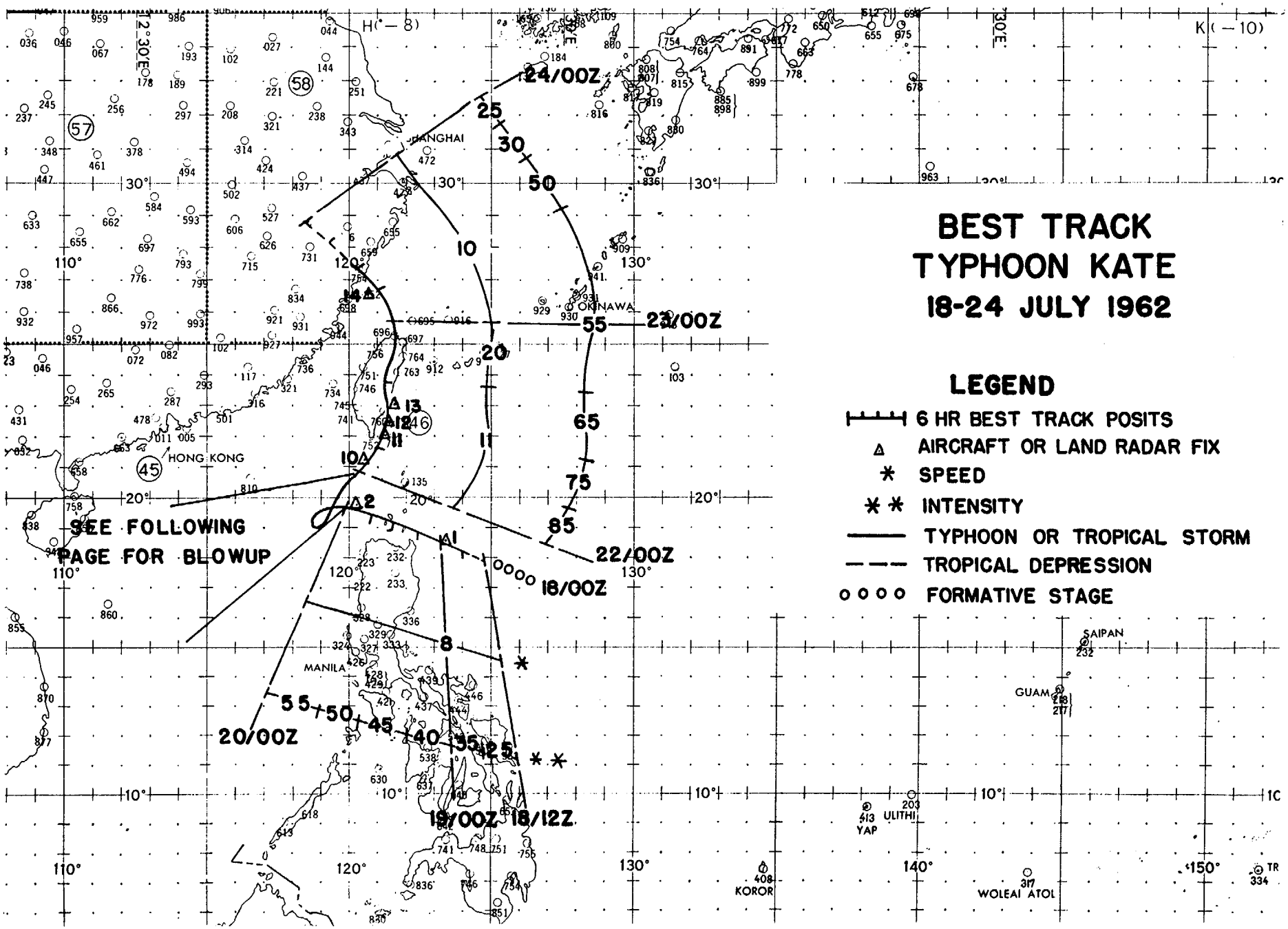
B. Final disposition - Dissipated

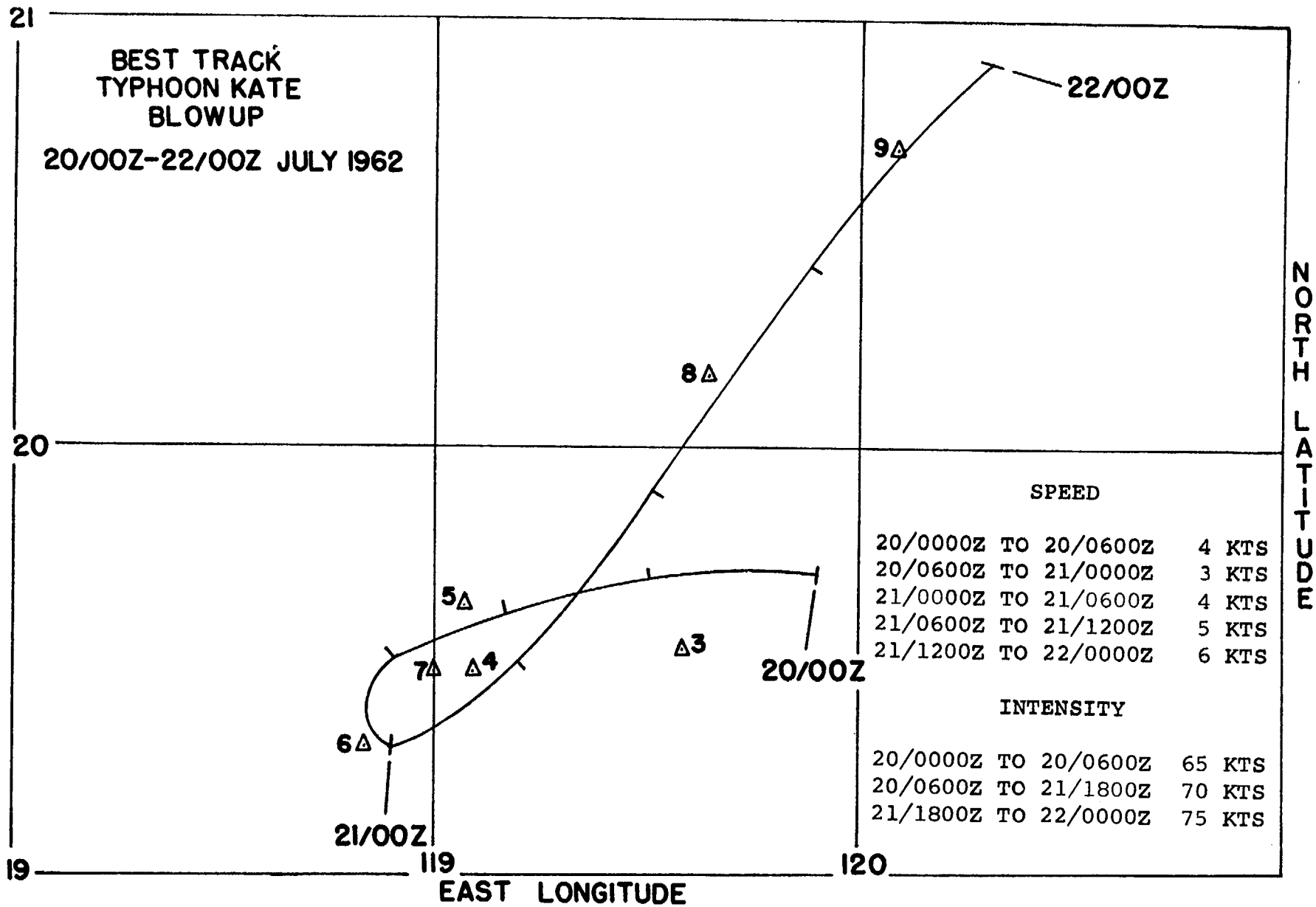
V. DAMAGE

A. Total lives lost - 110

B. Total monetary value - $25,000,000

C. Types of property - Crops, homes, rail lines, communications and bridges


BEST TRACK
TYPHOON KATE
18-24 JULY 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
SEE FOLLOWING PAGE FOR BLOWUP
24/00Z
23/00Z
22/00Z
18/00Z
20/00Z
19/00Z
18/12Z
SHANGHAI
OKINAWA
HONG KONG
MANILA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL


BEST TRACK
TYPHOON KATE
BLOWUP
20/00Z-22/00Z JULY 1962
21
20
19
119
120
EAST LONGITUDE
NORTH LATITUDE
22/00Z
9
8
5
7
4
3
20/00Z
6
21/00Z
SPEED
20/0000Z TO 20/0600Z 4 KTS
20/0600Z TO 21/0000Z 3 KTS
21/0000Z TO 21/0600Z 4 KTS
21/0600Z TO 21/1200Z 5 KTS
21/1200Z TO 22/0000Z 6 KTS
INTENSITY
20/0000Z TO 20/0600Z 65 KTS
20/0600Z TO 21/1800Z 70 KTS
21/1800Z TO 22/0000Z 75 KTS

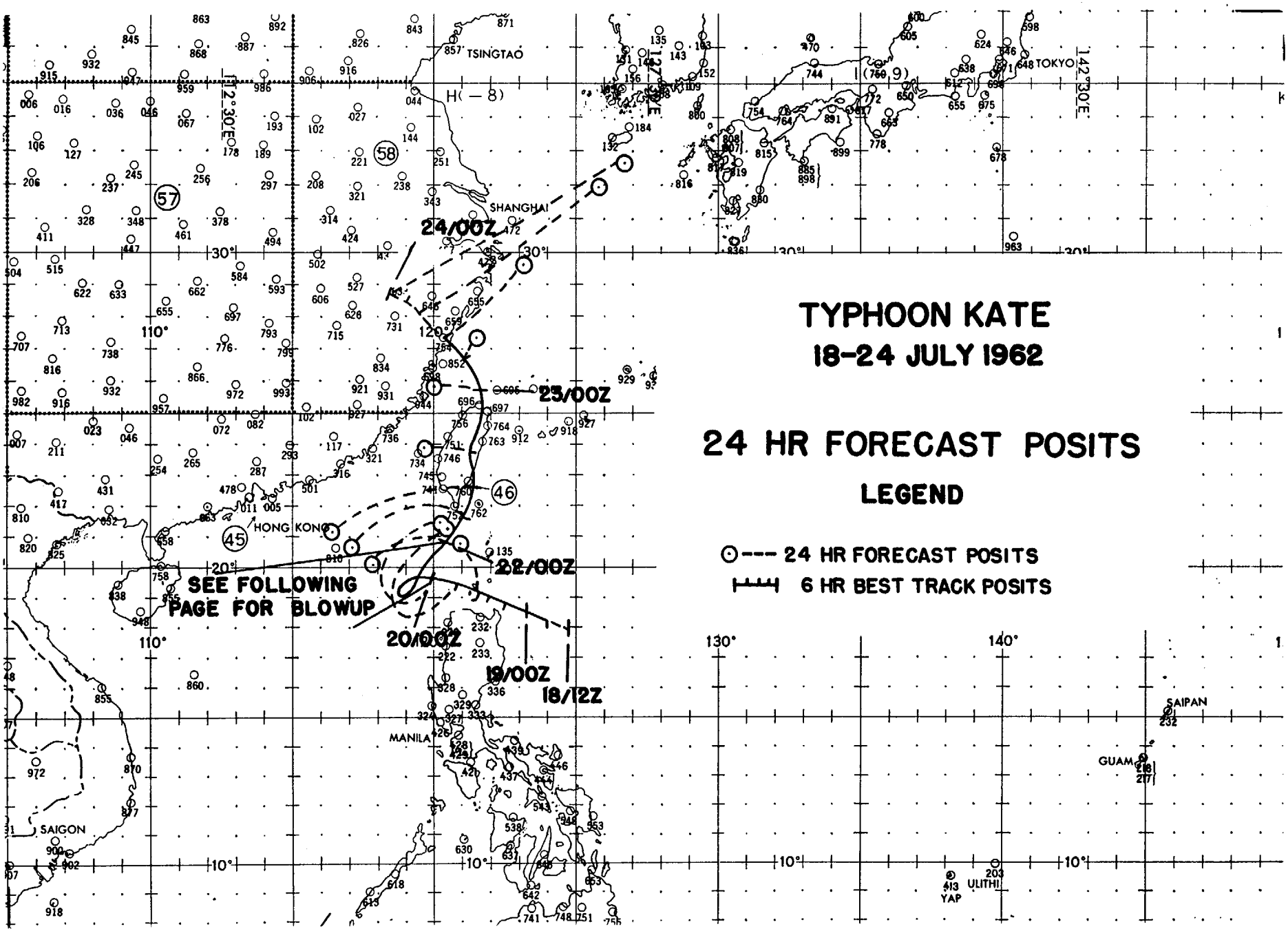
LAND RADAR AND AIRCRAFT FIXES - TYPHOON KATE

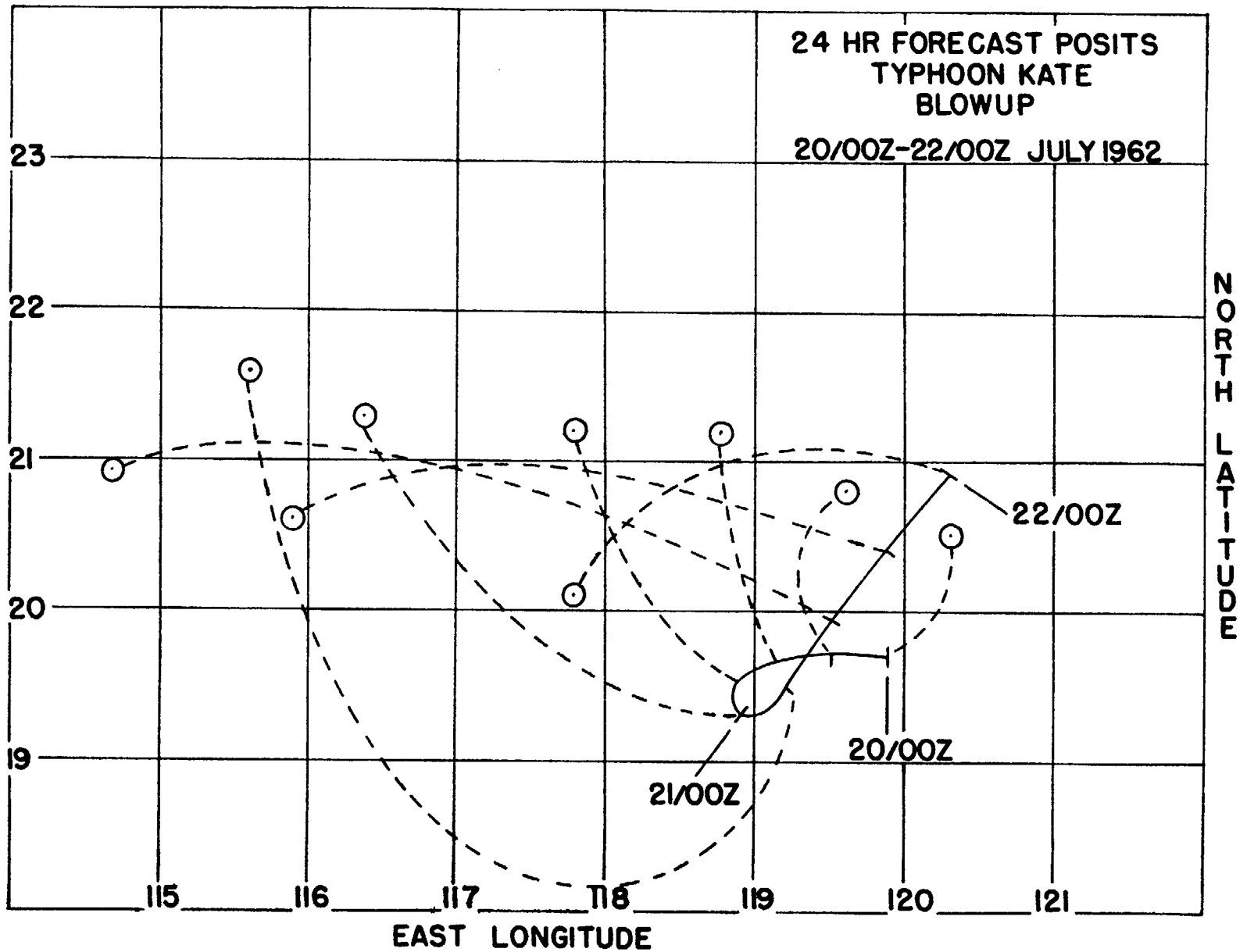
FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	182320Z	18.5N	123.3E	VW1-P-03	35	-	9808	999	13/	CIRC 40 MI DIA, OPEN N
2	192145Z	19.7N	120.2E	54-P-02	50	45	9910	993	11/08	CIRC 75 MI DIA, OPEN SW TO NW
3	200331Z	19.5N	119.6E	54-P-03	65	53	9640	-	16/10	CIRC 12 MI DIA, OPEN W
4	200655Z	19.4N	119.1E	LND/RDR	-	-	-	-	- -	---
5	201330Z	19.6N	119.1E	VW1-R-03	-	-	-	-	- -	OVAL 75 MI N-S & 25 MI E-W, WEAK WALL CLDS
6	202149Z	19.3N	118.8E	54-P-04	40	50	9510	978	19/17	CIRC 25 MI DIA, OPEN S
7	210310Z	19.4N	119.0E	54-P-05	45	50	9420	976	15/12	OBLONG 15X30 MI, OPEN SW TO NW
8	211420Z	20.2N	119.7E	VW1-R-04	-	-	-	-	- -	CIRC 35 MI DIA
9	212240Z	20.7N	120.1E	54-P-05	-	60	9190	990	13/09	CIRC 20 MI DIA, WALL CLDS ALL QUADS
10	220333Z	21.1N	120.6E	54-P-U	75	80	9060	964	- -	CIRC 12 MI DIA, WALL CLDS ALL QUADS
11	220720Z	22.0N	121.2E	LND/RDR	-	-	-	-	- -	---
12	221040Z	22.5N	121.4E	LND/RDR	-	-	-	-	- -	---
13	221305Z	22.9N	121.5E	LND/RDR	-	-	-	-	- -	---
14	231500Z	26.7N	120.7E	VW1-R-20	-	-	-	-	- -	NO WALL CLDS, OPEN N

TYPHOON KATE 18-24 JULY 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
181200Z	17.9N	124.7E	------	------
181800Z	18.2N	124.0E	------	------
190000Z	18.5N	123.2E	------	------
190600Z	18.9N	122.4E	------	------
191200Z	19.2N	121.6E	------	------
191800Z	19.6N	120.8E	------	------
200000Z	19.7N	119.9E	------	------
200600Z	19.7N	119.5E	005-68	------
201200Z	19.6N	119.2E	350-97	------
201800Z	19.5N	118.9E	330-118	------
210000Z	19.3N	118.9E	312-186	------
210600Z	19.5N	119.2E	302-233	304-204
211200Z	19.9N	119.5E	282-276	295-250
211800Z	20.4N	119.9E	273-223	286-308
220000Z	20.9N	120.3E	253-144	288-493
220600Z	21.7N	121.0E	254-222	284-552
221200Z	22.7N	121.5E	253-302	264-506
221800Z	23.8N	121.5E	272-97	258-537
230000Z	25.8N	121.6E	270-86	243-490
230600Z	26.7N	121.0E	030-51	246-473
231200Z	27.3N	120.2E	050-208	245-482
231800Z	28.0N	119.4E	054-408	294-66
240000Z	28.7N	118.5E	060-484	055-504

AVERAGE 24 HOUR ERROR 200.2 MI
AVERAGE 48 HOUR ERROR 405.4 MI


TYPHOON KATE
18-24 JULY 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
SEE FOLLOWING PAGE FOR BLOWUP
24/00Z
23/00Z
22/00Z
20/00Z
19/00Z
18/12Z
TSINGTAO
SHANGHAI
HONG KONG
MANILA
SAIGON
TOKYO
SAIPAN
GUAM
YAP
ULITHI
H(-8)
(9)
110°
120°
130°
140°
30°
20°
10°
112°30'E
127°E
142°30'E


24 HR FORECAST POSITS
TYPHOON KATE
BLOWUP
20/00Z-22/00Z JULY 1962
23
22
21
20
19
NORTH LATITUDE
115
116
117
118
119
120
121
EAST LONGITUDE
22/00Z
20/00Z
21/00Z

TRAFFIC CONTINUES AS USUAL THROUGH MANILA'S FLOODED STREETS CAUSED BY TYPHOON KATE. BOATS WOULD BE MORE APPROPRIATE ON MACARTHUR HIGHWAY. (STARS & STRIPES PHOTO)

TYPHOON LOUISE - 201200Z-281200Z JULY 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 8

2. Calendar days of typhoon intensity - 5¼

3. Total distance traveled during tropical warning period - 1962 MI

B. Characteristics as a typhoon

1. Min observed SLP - 958mb, 240400Z

2. Min observed 850mb height - 3750 ft, 230400Z

3. Min observed 700mb height - 9000 ft, 230400Z

4. Max vertical development - 30,000 ft, 250000Z

II. DEVELOPMENT

A. Initial impetus - Eastward movement of MPT and development of anticyclone over surface vortex.

B. Initial surface vortex

1. Embedded vortex at 190600Z, junction vortex absorbed.

2. Surface pressure less than 1008mb

3. Maximum surface wind - 15 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone

2. Wind velocity over vortex - 050/25 kts

III. STEERING

A. Prior to recurvature - 500mb

B. During recurvature - 300mb

C. After recurvature - 700mb

IV. DISSIPATION

A. Causative factor - Land strike and cold air

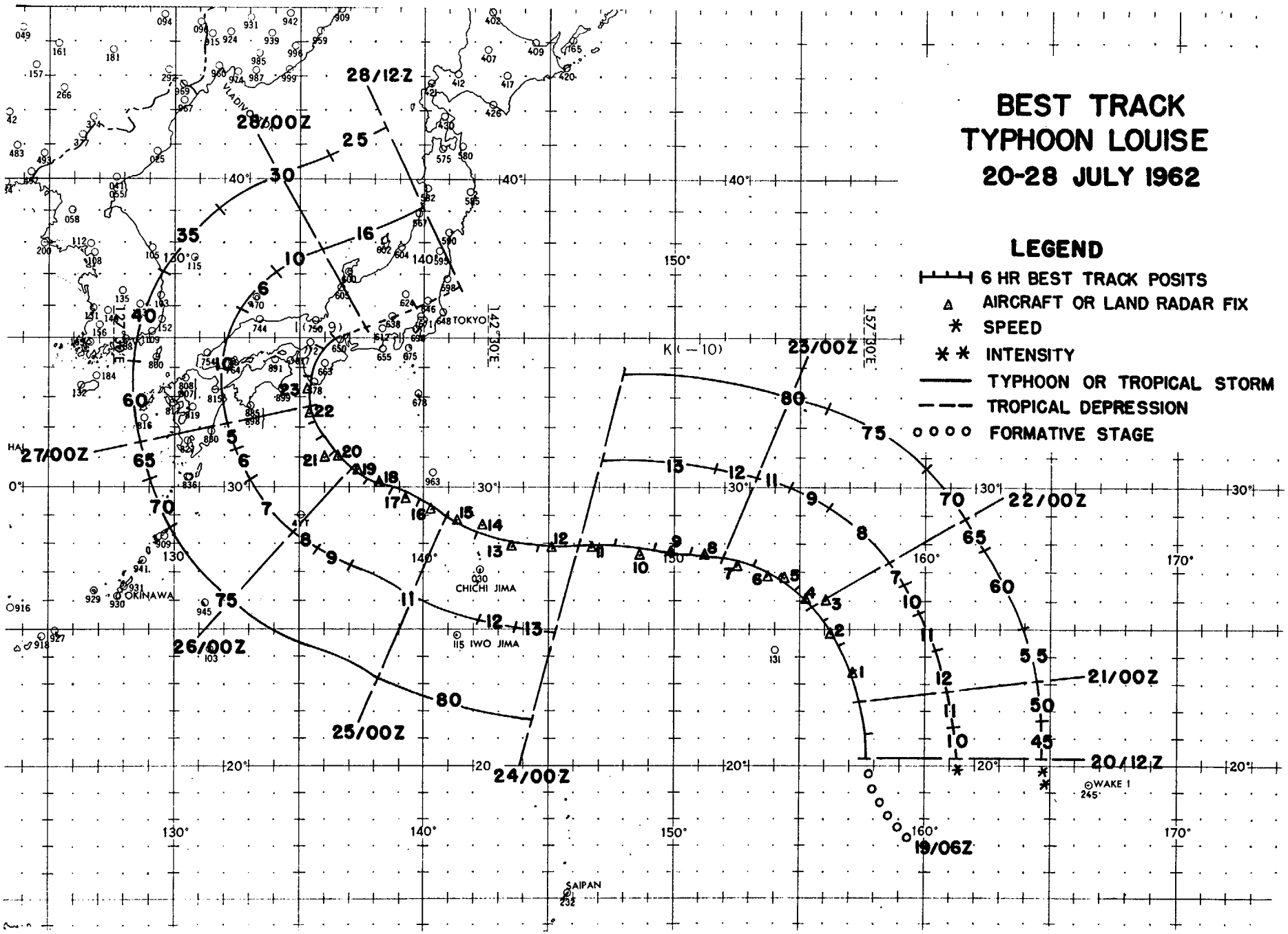
B. Final disposition - Dissipated

V. DAMAGE

A. Total lives lost - 15

B. Total monetary value - $7,500,000

C. Types of property - Crops, homes and bridges


BEST TRACK
TYPHOON LOUISE
20-28 JULY 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
28/12Z
28/00Z
27/00Z
26/00Z
25/00Z
24/00Z
23/00Z
22/00Z
21/00Z
20/12Z
19/06Z
TOKYO
CHICHI JIMA
IWO JIMA
OKINAWA
WAKE I
SAIPAN
142°30'E
157°30'E

LAND RADAR AND AIRCRAFT FIXES - TYPHOON LOUISE

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	210601Z	23.4N	157.0E	54-P-05	50	60	9450	983	15/15	ELLIP NE-SW 30X60 MI
2	211430Z	24.8N	156.3E	VW1-R-03	-	-	-	-	- -	---
3	212241Z	26.0N	156.0E	54-P-07	50	45	9310	972	18/12	OVAL 50 MI E-W,40 MI N-S,WALL CLDS N & S
4	220430Z	26.0N	155.1E	54-P-U	60	-	9240	967	18/11	CIRC 45 MI DIA
5	220945Z	26.7N	154.4E	VW1-R-03	-	-	-	-	- -	CIRC 40 MI DIA
6	221345Z	26.9N	153.7E	VW1-R-03	-	-	-	-	- -	CIRC 35 MI DIA,WALL CLDS 5 MI THICK
7	222130Z	27.2N	152.5E	54-P-07	70	75	9570	-	17/12	CIRC 29 MI DIA
8	230400Z	27.6N	151.1E	56-P-04	60	65	9000	960	15/11	CIRC 16 MI DIA,WALL CLDS 20 MI THICK
9	231000Z	27.6N	149.9E	VW1-R-03	-	-	-	-	- -	CIRC 37 MI DIA
10	231400Z	27.7N	148.6E	VW1-R-03	-	-	-	-	- -	CIRC 38 MI DIA
11	232145Z	27.9N	146.7E	54-P-10	75	-	9250	961	18/16	CIRC 35 MI DIA,WEAK WALL CLDS N-E
12	240400Z	27.9N	145.1E	54-P-05	75	-	9190	958	18/16	40 MI DIA,OPEN N-SE
13	241000Z	27.8N	143.5E	VW1-R-03	-	-	-	-	- -	CIRC 50 MI DIA
14	241600Z	28.6N	142.2E	VW1-R-01	-	-	-	-	- -	CIRC 54 MI DIA
15	242200Z	28.7N	141.3E	56-P-05	50	70	9430	-	16/16	CIRC 40 MI DIA,WALL CLDS 10 MI THICK
16	250330Z	29.4N	140.2E	56-P-01	-	65	9400	974	17/17	CIRC 30 MI DIA

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

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
17	251000Z	29.6N	139.2E	VW1-R-02	-	-	-	-	- -	CIRC 30 MI DIA, WALL CLDS ALL QUADS
18	251549Z	30.1N	138.1E	VW1-R-05	-	-	-	-	- -	32 MI DIA, OPEN SW
19	252200Z	30.5N	137.3E	56-P-05	70	60	9410	971	15/15	ELLIP 32 MI E-W
20	260340Z	31.0N	136.5E	56-P-05	100	80	9370	970	16/16	ELLIP 30 MI E-W
21	261000Z	31.0N	136.0E	VW1-R-03	-	-	-	-	- -	54 MI DIA, OPEN S&W
22	262315Z	32.5N	135.4E	56-P-20	55	90	9490	974	16/13	CIRC 25 MI DIA, OPEN S
23	270300Z	33.2N	135.3E	LND/RDR	-	-	-	-	- -	---

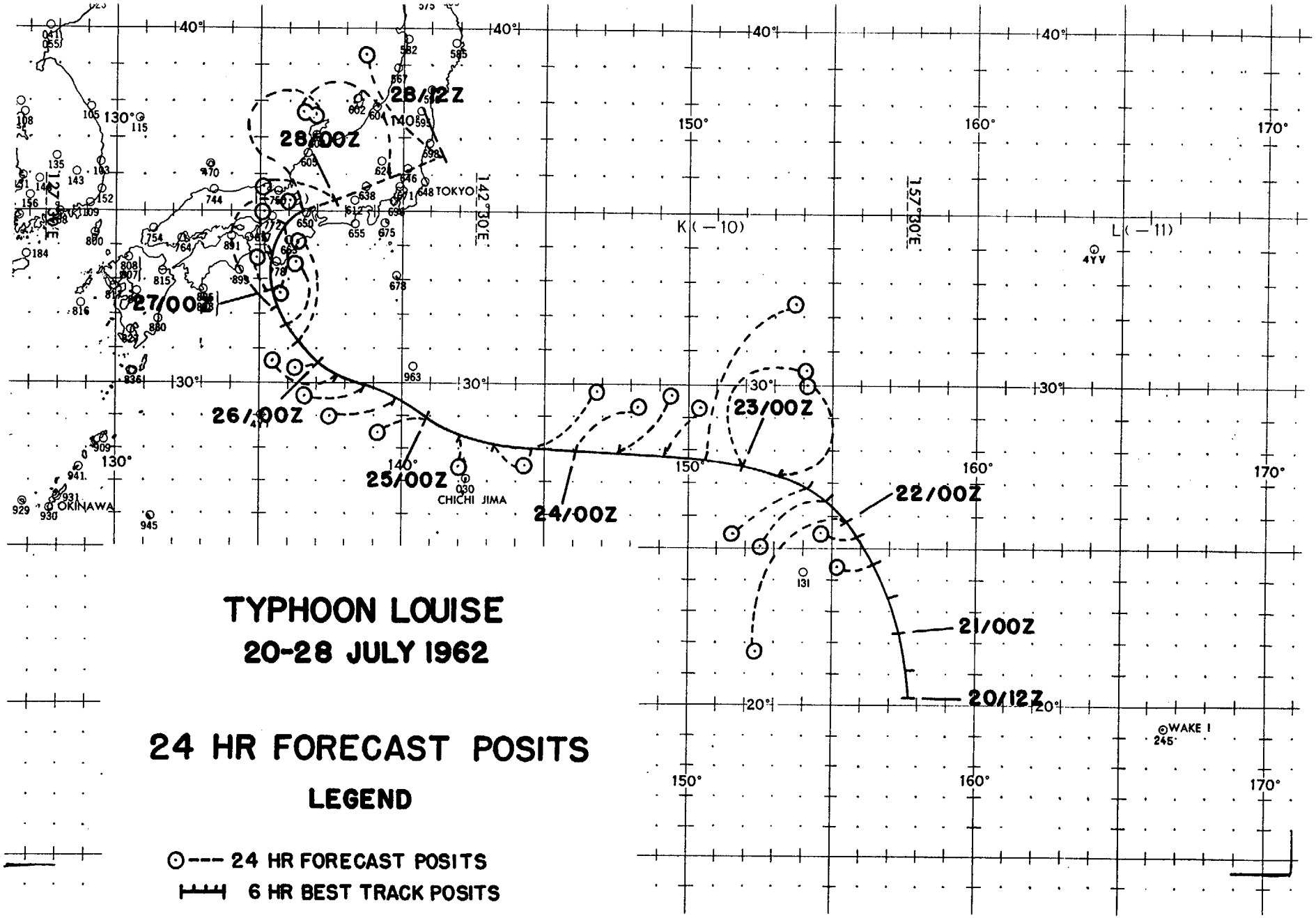
TYPHOON LOUISE 20-28 JULY 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
201200Z	20.2N	157.7E	------	------
201800Z	21.2N	157.5E	------	------
210000Z	22.2N	157.3E	------	------
210600Z	23.4N	157.0E	------	------
211200Z	24.4N	156.5E	------	------
211800Z	25.3N	155.9E	276-74	------
220000Z	25.8N	155.5E	215-306	------
220600Z	26.4N	154.8E	237-146	------
221200Z	26.8N	154.1E	237-157	------
221800Z	27.2N	153.1E	016-180	360-306
230000Z	27.4N	151.9E	033-212	231-286
230600Z	27.6N	150.6E	032-330	273-153
231200Z	27.7N	149.1E	038-114	294-120
231800Z	27.8N	147.6E	040-146	014-527
240000Z	27.8N	146.1E	053-132	043-760
240600Z	27.9N	144.6E	046-166	045-986
241200Z	28.1N	143.3E	127-60	016-276
241800Z	28.3N	142.0E	180-53	043-424
250000Z	28.9N	140.9E	256-100	049-283
250600Z	29.5N	139.8E	255-118	049-337
251200Z	29.9N	138.7E	265-113	206-90
251800Z	30.2N	137.7E	288-127	263-91
260000Z	30.6N	137.0E	249-44	314-247
260600Z	31.2N	136.4E	360-180	315-205
261200Z	31.7N	135.9E	012-123	320-220
261800Z	32.2N	135.5E	012-182	343-323
270000Z	32.7N	135.4E	345-67	333-217
270600Z	33.7N	135.4E	354-76	213-490
271200Z	34.6N	135.9E	192-132	219-430
271800Z	35.0N	136.5E	010-162	214-450

TYPHOON LOUISE 20-28 JULY 1962
POSITION AND FORECAST VERIFICATION DATA (CONT'D)

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
280000Z	35.3N	137.6E	282-129	358-160
280600Z	35.8N	139.5E	308-180	338-180
281200Z	36.5N	141.3E	325-214	270-262

AVERAGE 24 HOUR ERROR 143.7 MI
AVERAGE 48 HOUR ERROR 326 MI


TYPHOON LOUISE
20-28 JULY 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
20/12Z
21/00Z
22/00Z
23/00Z
24/00Z
25/00Z
26/00Z
27/00Z
28/00Z
28/12Z
TOKYO
CHICHI JIMA
OKINAWA
WAKE I
K(-10)
L(-11)
142°30'E
157°30'E
40°
30°
20°
130°
140°
150°
160°
170°

TYPHOON NORA - 260600Z JULY-040000Z AUGUST 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 8 3/4
2. Calendar days of typhoon intensity - 3
3. Total distance traveled during tropical warning period - 2622 MI

B. Characteristics as a typhoon

1. Min observed SLP - 968mb, 302200Z
2. Min observed 850mb height - 4090 ft, 302200Z
3. Min observed 700mb height - 9340 ft, 010015Z
4. Max vertical development - 30,000 ft, 311200Z

II. DEVELOPMENT

A. Initial impetus - Easterly wave and polar trough fractured after superposition. Surge from westerlies into easterlies at the 200mb level.

B. Initial surface vortex

1. Junction vortex at 260000Z
2. Surface pressure less than 1000mb
3. Maximum surface wind - 20 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone
2. Wind velocity over vortex - 090/25 kts

III. STEERING

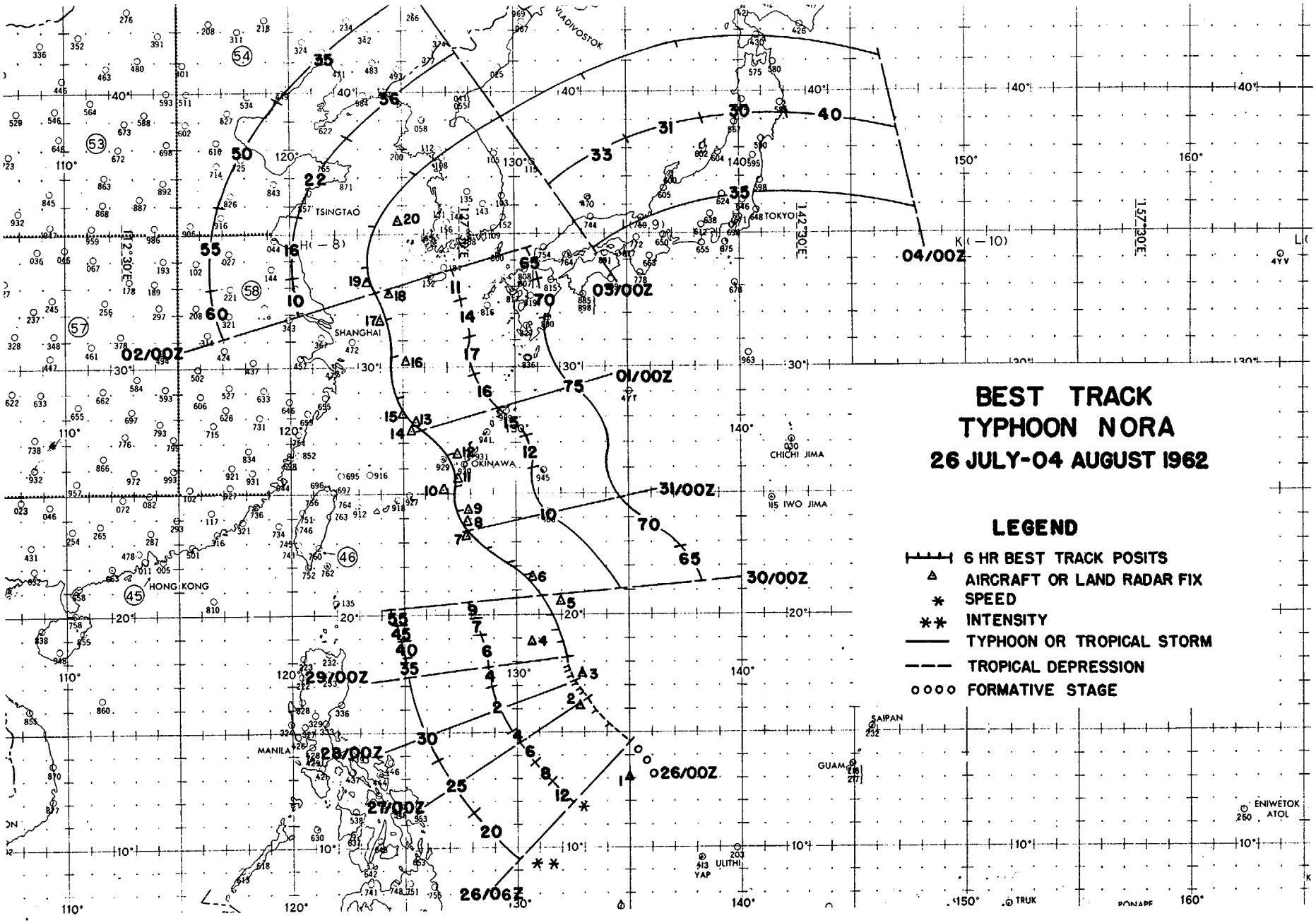
A. Prior to recurvature - 500mb
B. During recurvature - 500mb
C. After recurvature - 700mb

IV. DISSIPATION

A. Causative factor - Cold air
B. Final disposition - Extratropical

V. DAMAGE

A. Total lives lost - 4
B. Total monetary value - $1,000,000
C. Types of property - Homes, crops, railroads and roads


BEST TRACK
TYPHOON NORA
26 JULY-04 AUGUST 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
VLADIVOSTOK
TSINGTAO
SHANGHAI
OKINAWA
TOKYO
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIPAN
GUAM
ULITHI
YAP
TRUK
PONAPE
ENIWETOK ATOL
02/00Z
03/00Z
04/00Z
01/00Z
31/00Z
30/00Z
29/00Z
28/00Z
27/00Z
26/00Z
26/06Z

LAND RADAR AND AIRCRAFT FIXES - TYPHOON NORA

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	260330Z	13.0N	135.0E	VW1-P-U	-	-	-	998	- -	---
2	262200Z	16.2N	132.8E	VW1-P-U	-	-	-	1000	- -	---
3	280140Z	17.5N	133.0E	VW1-P-10	15	-	-	998	- -	180 MI E-W & 40 MI N-S
4	290045Z	18.7N	130.7E	VW1-P-U	30	-	-	992	- -	ORIEN WNW-ESE 60X150 MI
5	292203Z	20.5N	132.0E	54-P-10	60	75	9730	988	12/12	DIA 10 MI
6	300336Z	21.5N	130.6E	54-P-05	65	52	9700	976	14/13	OVAL 80X120 MI
7	302200Z	23.3N	127.8E	54-P-02	45	50	9420	968	17/16	DIA 25 MI,OPEN E&W
8	310200Z	23.7N	127.8E	54-P-15	60	80	9410	973	15/13	CIRC 30 MI DIA
9	310400Z	24.2N	127.9E	56-P-05	-	-	9420	971	16/15	DIA 30 MI
10	311050Z	25.1N	126.8E	VW1-R-03	-	-	-	-	- -	CIRC 15 MI DIA,NO WALL CLDS
11	311400Z	25.5N	127.4E	LND/RDR	-	-	-	-	- -	DIFFUSE
12	311600Z	26.5N	127.4E	VW1-R-03	-	-	-	-	- -	CIRC 8 MI DIA,OPEN W
13	311940Z	27.8N	125.6E	LND/RDR	-	-	-	-	- -	---
14	010015Z	27.5N	125.4E	56-P-01	60	90	9340	972	16/12	ELLIP 50X20 MI
15	010330Z	28.1N	125.0E	56-P-01	60	90	9370	974	16/13	ELLIP 80X60 MI
16	011101Z	30.2N	125.1E	VW1-P-10	-	-	-	-	- -	CIRC 3 MI DIA,OPEN NE
17	011603Z	31.8N	124.0E	VW1-R-10	-	-	-	-	- -	DIA 39 MI
18	012145Z	32.8N	124.3E	54-P-02	-	80	9470	973	17/10	CIRC WEAK WALL CLDS

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

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
19	020345Z	33.3N	123.4E	54-P-02	-	60	9490	976	13/10	OPEN ALL QUADS
20	021031Z	35.4N	124.8E	VW1-R-15	-	-	-	-	- -	POORLY DEFINED

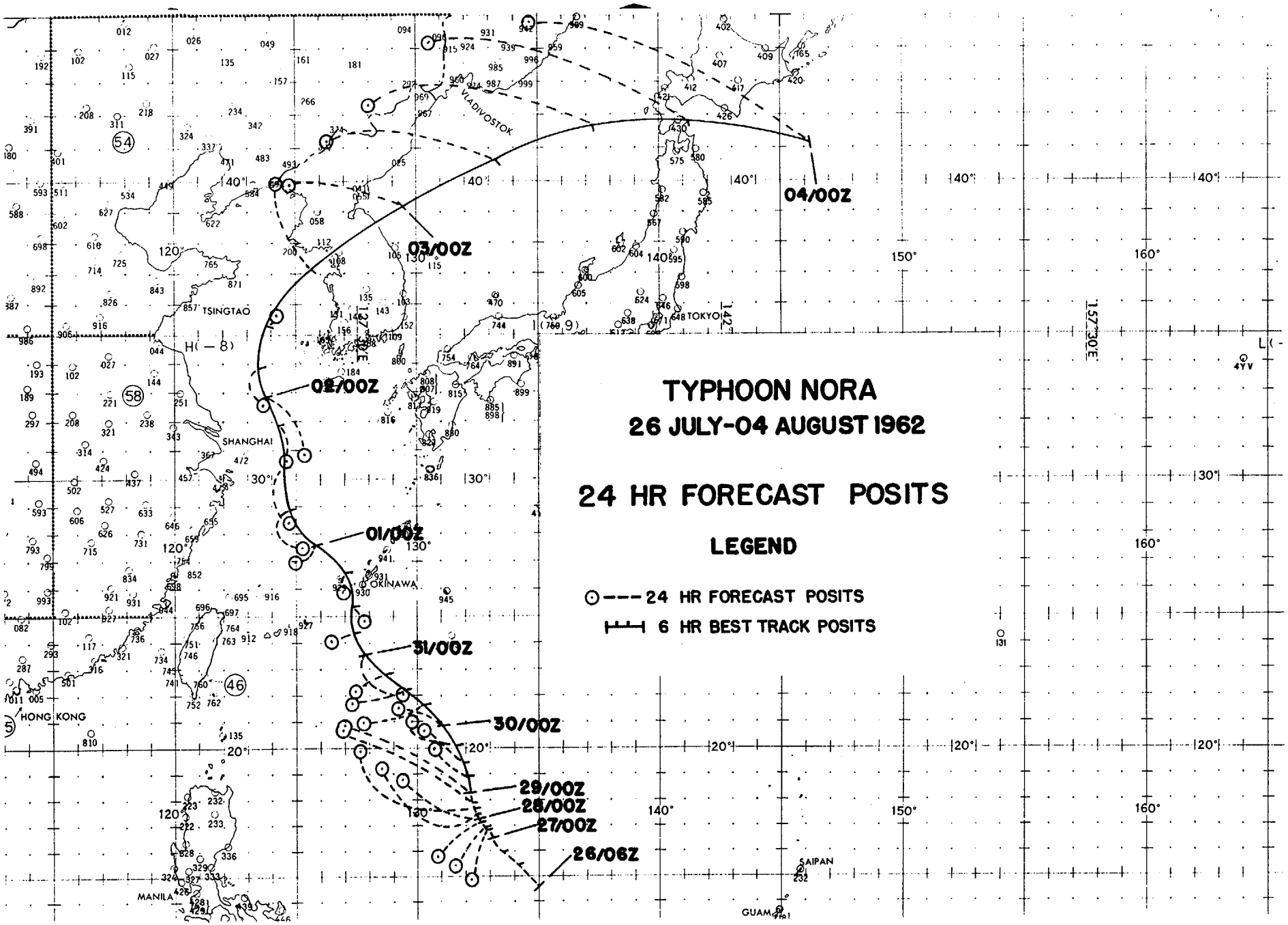
TYPHOON NORA 26 JUL-04 AUG 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
260600Z	14.6N	135.0E	------	------
261200Z	15.4N	134.2E	------	------
261800Z	16.0N	133.5E	------	------
270000Z	16.5N	133.2E	------	------
270600Z	16.8N	132.9E	------	------
271200Z	16.9N	132.8E	------	------
271800Z	17.2N	132.7E	------	------
280000Z	17.3N	132.6E	------	------
280600Z	17.5N	132.5E	------	------
281200Z	17.7N	132.5E	------	------
281800Z	17.9N	132.4E	------	------
290000Z	18.3N	132.3E	------	------
290600Z	18.9N	132.1E	------	------
291200Z	19.4N	131.9E	------	------
291800Z	20.1N	131.6E	------	------
300000Z	20.8N	131.1E	------	------
300600Z	21.6N	130.3E	254-145	------
301200Z	22.2N	129.5E	255-126	------
301800Z	22.8N	128.7E	237-77	------
310000Z	23.5N	127.9E	132-119	------
310600Z	24.4N	127.4E	247-52	255-83
311200Z	25.3N	127.3E	130-48	259-214
311800Z	26.6N	127.0E	180-41	238-110
010000Z	27.5N	125.7E	234-48	168-223
010600Z	28.8N	124.7E	156-90	190-147
011200Z	30.4N	124.5E	173-121	154-270
011800Z	31.8N	124.3E	168-81	163-230
020000Z	32.8N	123.8E	147-145	205-95
020600Z	33.8N	123.4E	171-77	163-113
021200Z	35.3N	123.9E	055-23	168-137
021800Z	37.1N	125.6E	338-185	185-113

TYPHOON NORA 26 JUL-04 AUG 1962 (CONT'D)
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
030000Z	39.2N	129.4E	283-215	206-220
030600Z	40.7N	133.2E	275-314	238-366
031200Z	41.7N	137.1E	275-404	271-415
031800Z	41.8N	141.1E	288-516	279-561
040000Z	41.2N	146.3E	295-600	295-592

AVERAGE 24 HOUR ERROR 171.4 MI
AVERAGE 48 HOUR ERROR 243.1 MI


TYPHOON NORA
26 JULY-04 AUGUST 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
04/00Z
03/00Z
02/00Z
01/00Z
31/00Z
30/00Z
29/00Z
28/00Z
27/00Z
26/06Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
HONG KONG
MANILA
SAIPAN
GUAM
157°30'E

TYPHOON OPEL - 300600Z JULY-061200Z AUGUST 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 6¼

2. Calendar days of typhoon intensity - 4

3. Total distance traveled during tropical warning period - 2310 MI

B. Characteristics as a typhoon

1. Min observed SLP - 910mb, 050340Z

2. Min observed 850mb height - 1980 ft, 050340Z

3. Min observed 700mb height - 7590 ft, 050340Z

4. Max vertical development - 35,000 ft, 051200Z

II. DEVELOPMENT

A. Initial impetus - Easterly wave and polar trough fractured after superposition. Surge from westerlies into easterlies at the 200mb level.

B. Initial surface vortex

1. Junction vortex at 281200Z

2. Surface pressure less than 1007mb

3. Maximum surface wind - 15 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone

2. Wind velocity over vortex - 070/31 kts

III. STEERING

A. Prior to recurvature - 500mb

B. During recurvature - NA

C. After recurvature - NA

IV. DISSIPATION

A. Causative factor - Land strike and cold air

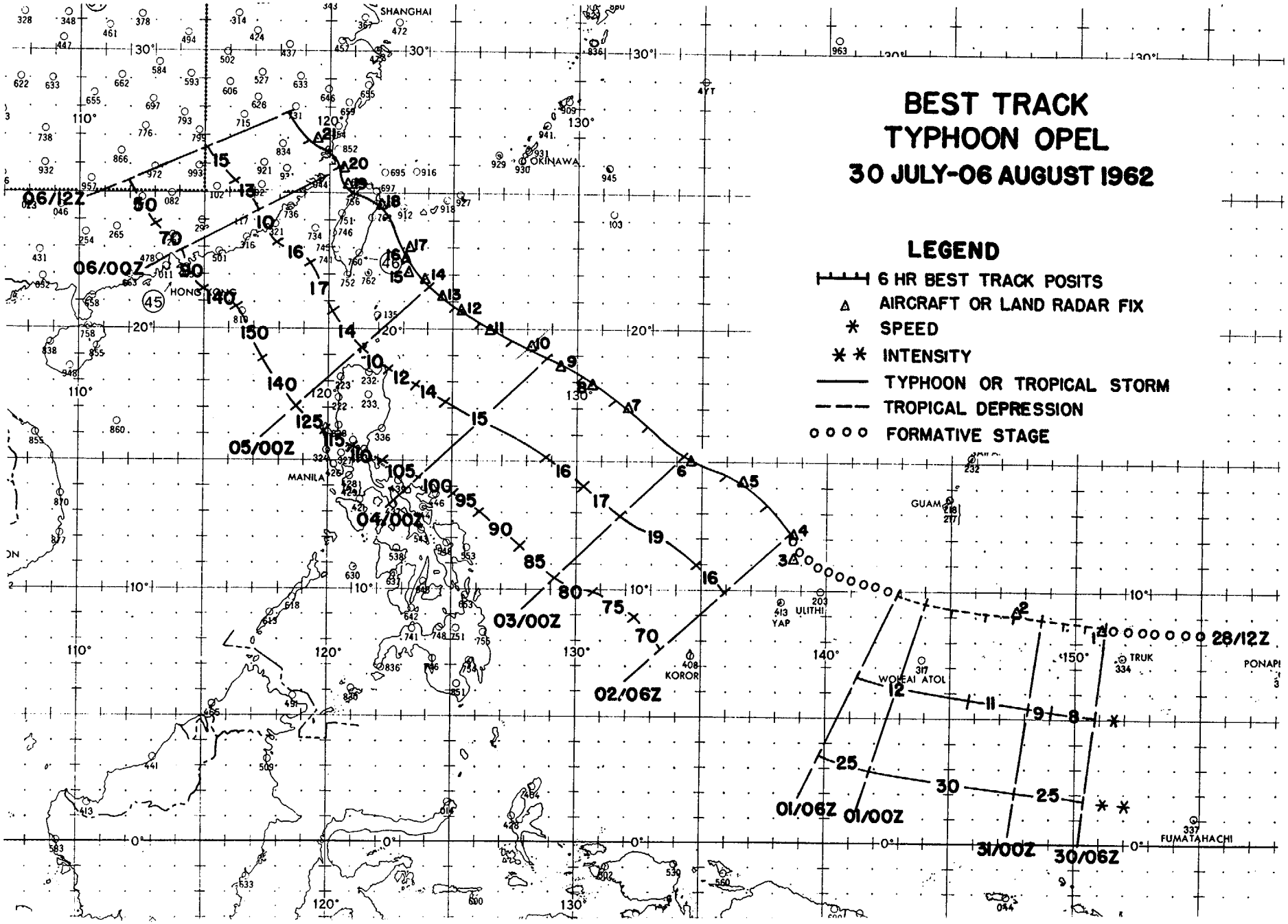
B. Final disposition - Extratropical

V. DAMAGE

A. Total lives lost - 75

B. Total monetary value - $25,000,000

C. Types of property - Crops, homes, power and communications lines, ships and boats


BEST TRACK
TYPHOON OPEL
30 JULY-06 AUGUST 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
SHANGHAI
OKINAWA
HONG KONG
MANILA
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPI
FUMATAHACHI
06/12Z
06/00Z
05/00Z
04/00Z
03/00Z
02/06Z
01/06Z
01/00Z
31/00Z
30/06Z
28/12Z

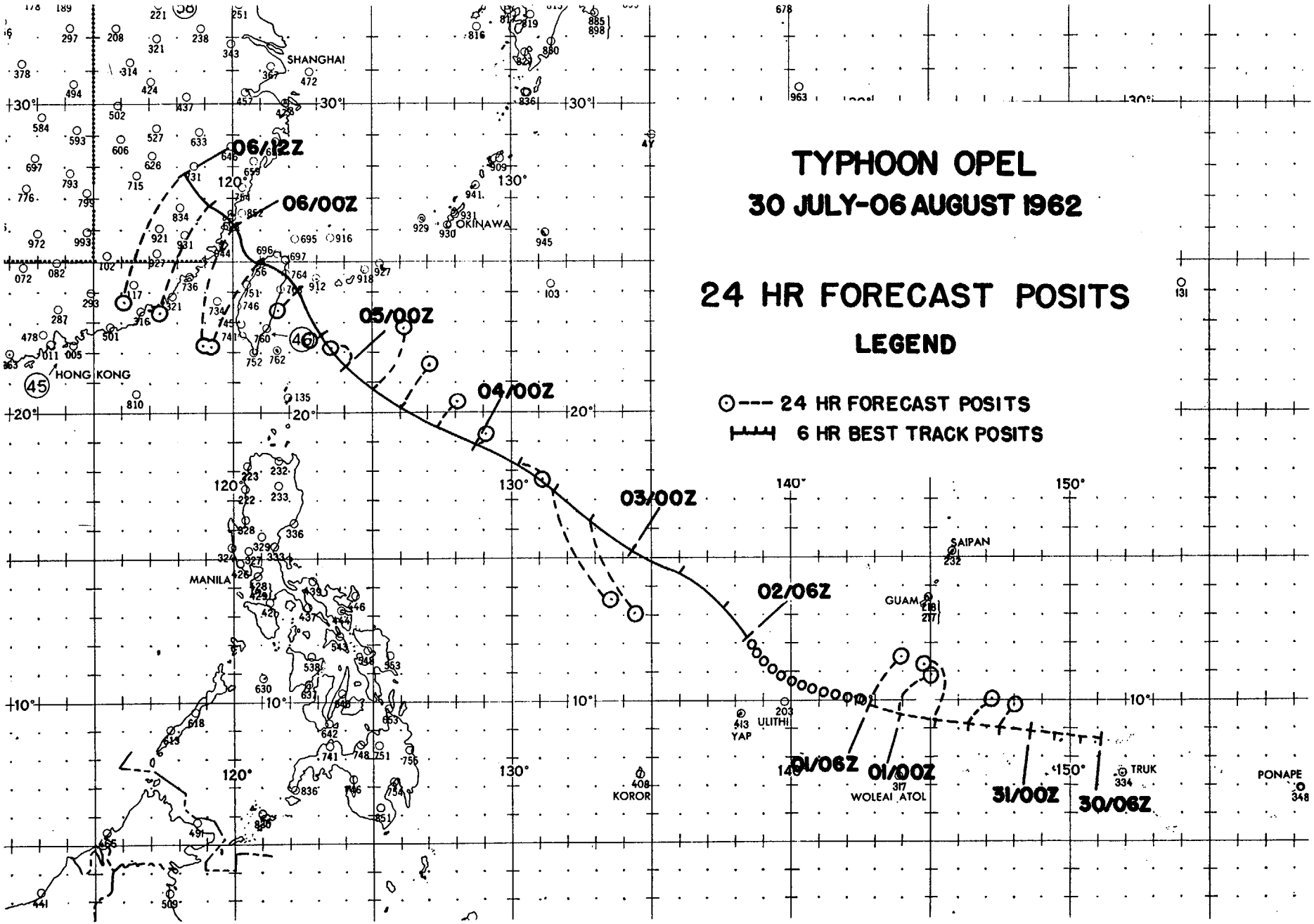
LAND RADAR AND AIRCRAFT FIXES - TYPHOON OPEL

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	300428Z	08.6N	151.3E	VW1-P-01	25	-	10080	1000	15/-	25 MI N-S & 40 MI E-W
2	302300Z	09.2N	147.7E	VW1-P-15	30	-	-	-	- -	NOT WELL DEFINED
3	020245Z	11.3N	138.8E	VW1-P-03	70	-	-	987	- -	DIA 60 MI
4	020550Z	12.1N	138.6E	VW1-P-03	-	-	-	986	- -	10 MI N-S & 20 MI E-W
5	021600Z	14.1N	136.7E	VW1-R-05	-	-	-	-	- -	CIRC 15 MI DIA,OPEN N&S
6	022215Z	15.0N	134.6E	54-P-05	80	60	9850	980	13/12	CIRC 5 MI DIA
7	031000Z	17.0N	132.0E	VW1-R-03	-	-	-	-	- -	CIRC 37 MI DIA,OPEN W
8	031547Z	17.9N	130.6E	VW1-R-03	-	-	-	-	- -	CIRC 30 MI DIA
9	032200Z	18.6N	129.3E	54-P-03	65	80	9230	954	16/11	DIA 30 MI
10	040337Z	19.3N	128.1E	54-P-03	50	90	9060	966	19/17	CIRC 30 MI DIA
11	041000Z	20.0N	126.5E	VW1-R-03	-	-	-	-	- -	DIA 28 MI
12	041600Z	20.7N	125.3E	VW1-R-01	-	-	-	-	- -	DIA 23 MI
13	042120Z	21.2N	124.5E	54-P-02	135	130	7730	-	26/20	CIRC 15 MI DIA
14	050200Z	21.8N	123.9E	LND/RDR	-	-	-	-	- -	---
15	050340Z	22.0N	123.1E	54-P-05	150	130	7590	910	26/22	CIRC 18 MI DIA
16	050600Z	22.6N	123.2E	LND/RDR	-	-	-	-	- -	---
17	050900Z	23.0N	123.1E	LND/RDR	-	-	-	-	- -	---
18	051400Z	24.6N	122.0E	LND/RDR	-	-	-	-	- -	---
19	052100Z	25.3N	120.7E	LND/RDR	-	-	-	-	- -	---
20	052300Z	25.8N	120.5E	LND/RDR	-	-	-	-	- -	---
21	060300Z	26.9N	119.5E	LND/RDR	-	-	-	-	- -	---

TYPHOON OPEL 30 JUL-06 AUG 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
300600Z	08.6N	151.2E	------	------
301200Z	08.7N	150.3E	------	------
301800Z	08.8N	149.5E	------	------
310000Z	08.9N	148.6E	------	------
310600Z	09.0N	147.5E	------	------
311200Z	09.2N	146.4E	------	------
311800Z	09.3N	145.2E	------	------
010000Z	09.5N	144.0E	------	------
010600Z	09.9N	142.8E	------	------
NO WARNINGS ISSUED 011200Z TO 020600Z				
020600Z	12.2N	138.6E	------	------
021200Z	13.4N	137.6E	------	------
021800Z	14.5N	136.0E	------	------
030000Z	15.2N	134.2E	------	------
030600Z	16.3N	132.9E	153-215	------
031200Z	17.3N	131.5E	153-255	------
031800Z	18.2N	130.2E	118-63	------
040000Z	18.9N	128.8E	030-32	------
040600Z	19.6N	127.4E	040-65	138-320
041200Z	20.2N	126.1E	035-102	135-350
041800Z	20.8N	125.0E	030-135	056-122
050000Z	21.5N	124.1E	321-58	037-220
050600Z	22.5N	123.2E	245-27	046-150
051200Z	24.1N	122.4E	226-60	050-127
051800Z	25.0N	120.9E	210-193	054-140
060000Z	25.9N	120.3E	199-234	225-95
060600Z	26.8N	119.3E	208-227	184-132
061200Z	27.9N	118.3E	205-276	190-155

AVERAGE 24 HOUR ERROR 138.7 MI
AVERAGE 48 HOUR ERROR 181.1 MI


TYPHOON OPEL
30 JULY-06 AUGUST 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
06/12Z
06/00Z
05/00Z
04/00Z
03/00Z
02/06Z
01/06Z
01/00Z
31/00Z
30/06Z
SHANGHAI
OKINAWA
HONG KONG
MANILA
SAIPAN
GUAM
ULITHI
YAP
KOROR
WOLEAI ATOL
TRUK
PONAPE
30°
20°
10°
120°
130°
140°
150°

TYPHOON PATSY - 060000Z-110000Z AUGUST 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 5

2. Calendar days of typhoon intensity-1½

3. Total distance traveled during tropical warning period - 1848 MI

B. Characteristics as a typhoon

1. Min observed SLP - 980mb, 082220Z

2. Min observed 850mb height - 4510 ft, 082220Z

3. Min observed 700mb height - 9900 ft, 082220Z

4. Max vertical development - 30,000 ft, 090000Z

II. DEVELOPMENT

A. Initial impetus - Surge from westerlies into easterlies and MPT at the 200mb level.

B. Initial surface vortex

1. Junction vortex at 051200Z

2. Surface pressure less than 1010mb

3. Maximum surface wind - 10 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone

2. Wind velocity over vortex - 080/90 kts

III. STEERING

A. Prior to recurvature - 500mb

B. During recurvature - NA

C. After recurvature - NA

IV. DISSIPATION

A. Causative factor - Land strike and cold air

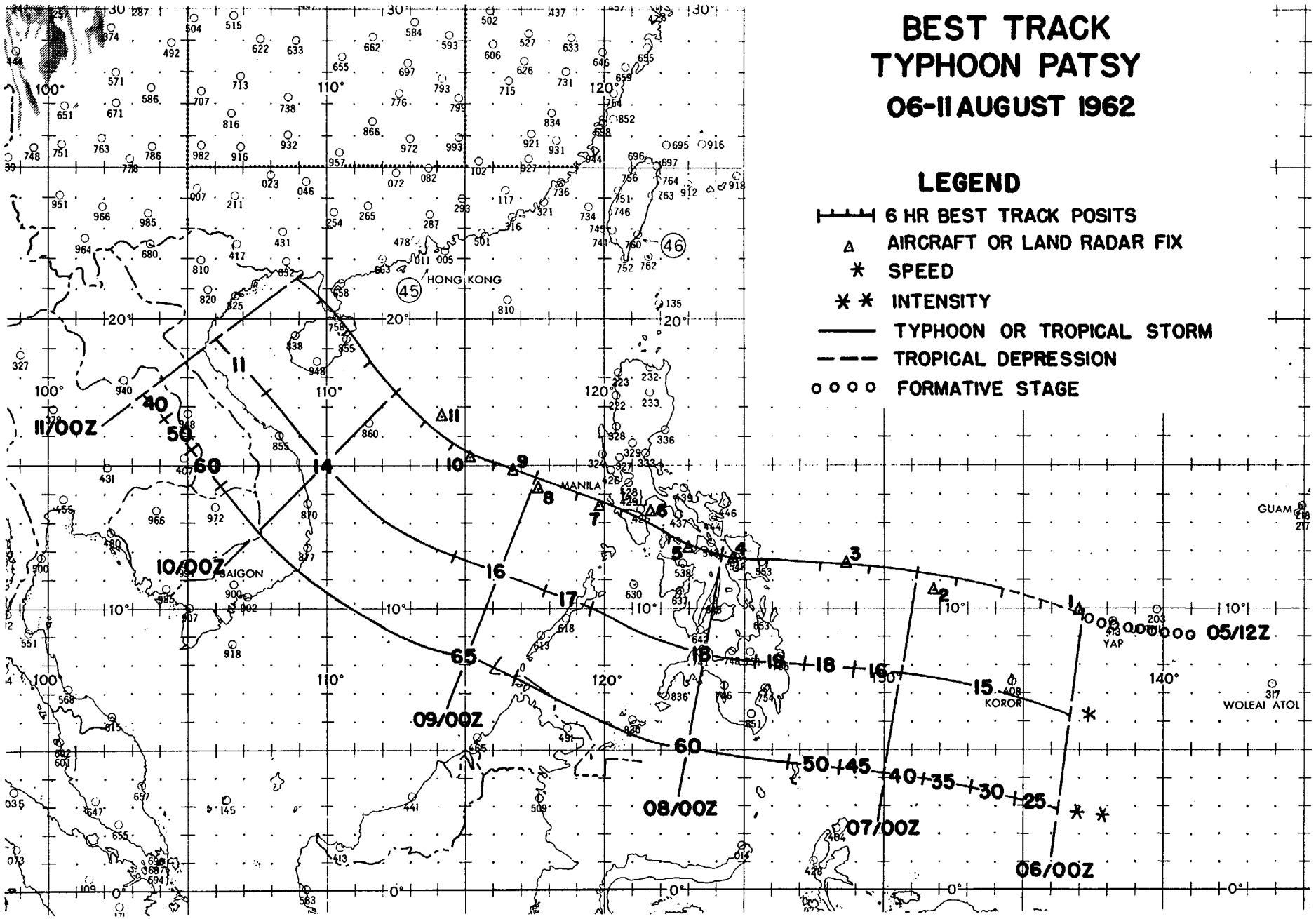
B. Final disposition - Dissipated

V. DAMAGE

A. Total lives lost - 23

B. Total monetary value - $2,500,000

C. Types of property - Crops, homes, ships, boats, communications equipment and highways


BEST TRACK
TYPHOON PATSY
06-11 AUGUST 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
HONG KONG
MANILA
SAIGON
GUAM
YAP
KOROR
WOLEAI ATOL
11/00Z
10/00Z
09/00Z
08/00Z
07/00Z
06/00Z
05/12Z

LAND RADAR AND AIRCRAFT FIXES - TYPHOON **PATSY**

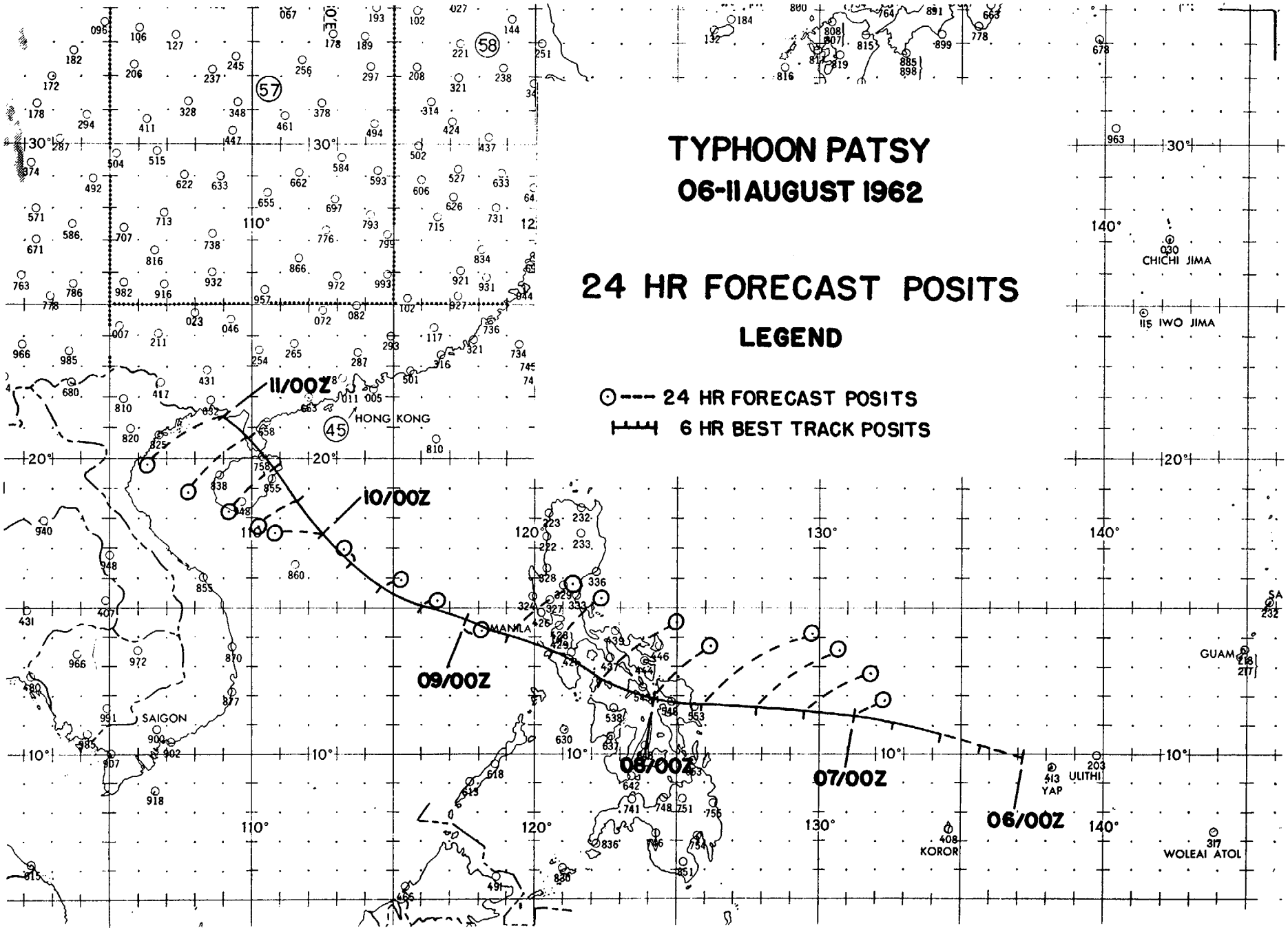
FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	060035Z	09.9N	137.0E	VW1-P-U	20	-	-	1005	- -	30 MI NW-SE & 10 MI SW-NE
2	062250Z	10.6N	131.7E	VW1-P-03	40	-	-	1001	- -	40 MI DIA
3	070919Z	11.6N	128.6E	VW1-P-03	45	-	-	990	- -	CIRC 45 MI DIA, OPEN NE & E
4	072230Z	11.8N	124.5E	54-P-05	60	60	10000	-	- -	---
5	080415Z	12.1N	123.0E	54-P-02	50	60*	18850*	-	-06/-06*	DIA 20 MI
6	081100Z	13.2N	121.6E	VW1-R-10	-	-	-	-	- -	OVAL 48 MI NW-SE & 34 MI NE-SW
7	081530Z	13.6N	119.8E	VW1-P-03	-	-	-	-	16/15	CIRC 12 MI DIA, OPEN N & NE
8	082220Z	14.1N	117.4E	54-P-05	50	70	9900	980	13/11	16 MI E-W & 12 MI N-S, OPEN N
9	090340Z	14.8N	116.6E	54-P-02	60	60	9990	995	16/14	CIRC 20 MI DIA, WELL DEFINED
10	090955Z	15.3N	115.1E	VW1-P-02	65	-	-	-	- -	CIRC 75 MI DIA
11	091600Z	16.6N	114.1E	VW1-R-10	-	-	-	-	- -	NOT WELL DEFINED

* 500MB DATA

TYPHOON PATSY 06-11 AUG 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
060000Z	09.9N	137.2E	------	------
060600Z	10.3N	135.6E	------	------
061200Z	10.7N	134.3E	------	------
061800Z	11.1N	132.6E	------	------
070000Z	11.3N	131.2E	------	------
070600Z	11.4N	129.5E	------	------
071200Z	11.6N	127.8E	------	------
071800Z	11.7N	125.9E	------	------
080000Z	11.9N	124.1E	050-164	------
080600Z	12.6N	122.3E	053-192	------
081200Z	13.4N	120.7E	039-146	------
081800Z	14.0N	119.1E	053-169	------
090000Z	14.6N	117.5E	122-40	057-242
090600Z	15.1N	116.0E	080-39	054-257
091200Z	15.7N	114.6E	058-44	040-225
091800Z	16.5N	113.5E	332-36	045-212
100000Z	17.5N	112.5E	272-90	240-8
100600Z	18.6N	111.6E	236-95	230-75
101200Z	19.7N	110.7E	225-130	216-119
101800Z	20.6N	109.9E	230-155	236-189
110000Z	21.3N	109.0E	240-170	243-255

AVERAGE 24 HOUR ERROR 113.1 MI
AVERAGE 48 HOUR ERROR 175.8 MI


TYPHOON PATSY
06-11 AUGUST 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
11/00Z
10/00Z
09/00Z
08/00Z
07/00Z
06/00Z
HONG KONG
MANILA
SAIGON
CHICHI JIMA
IWO JIMA
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
110°
120°
130°
140°
30°
20°
10°

TYPHOON RUTH - 131800Z-221800Z AUGUST 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 9
2. Calendar days of typhoon intensity - 8
3. Total distance traveled during tropical warning period - 2316 MI

B. Characteristics as a typhoon

1. Min observed SLP - 916mb, 160345Z
2. Min observed 850mb height - 2005 ft, 160345Z
3. Min observed 700mb height - 7830 ft, 160345Z
4. Max vertical development - 45,000 ft, 170000Z

II. DEVELOPMENT

A. Initial impetus - Surge from westerlies into MPT followed by a cut-off low from MPT.

B. Initial surface vortex

1. Junction vortex at 111200Z
2. Surface pressure less than 1010mb
3. Maximum surface wind - 10 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone
2. Wind velocity over vortex - 045/16 kts

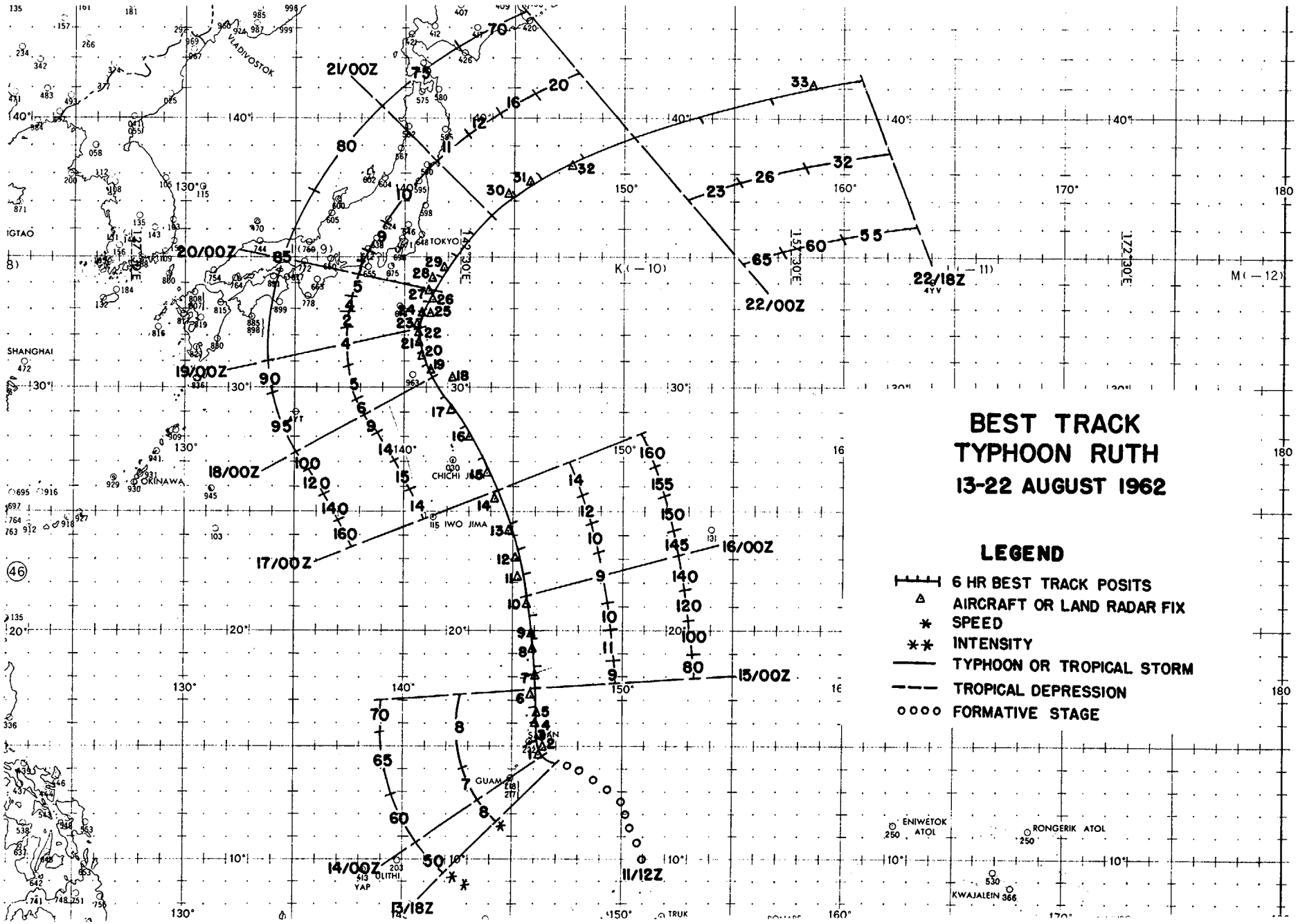
III. STEERING

A. Prior to recurvature - 200mb
B. During recurvature - 300mb
C. After recurvature - 300mb

IV. DISSIPATION

A. Causative factor - Cold air
B. Final disposition - Extratropical

V. DAMAGE - No reports received


BEST TRACK
TYPHOON RUTH
13-22 AUGUST 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
21/00Z
20/00Z
19/00Z
18/00Z
17/00Z
16/00Z
15/00Z
14/00Z
13/18Z
11/12Z
22/00Z
22/18Z
VLADIVOSTOK
TOKYO
SHANGHAI
OKINAWA
CHICHI JIMA
IWO JIMA
GUAM
YAP
ULITHI
TRUK
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
K(-10)
M(-12)

LAND RADAR AND AIRCRAFT FIXES - TYPHOON RUTH

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	140000Z	14.6N	146.2E	54-P-02	55	50	10040	994	09/09	CIRC 25 MI DIA,OPEN W
2	140100Z	14.9N	146.3E	VW1-R-08	-	-	-	-	- -	BEGINNING TO CLOSE UP
3	140408Z	15.0N	146.1E	54-P-01	60	45	9950	-	12/12	INDEFINITE,OPEN N
4	141105Z	16.0N	146.0E	LND/RDR	-	-	-	-	- -	OPEN N
5	141500Z	16.4N	146.0E	VW1-R-¼	-	-	-	-	- -	DIA 6 MI,WALL CLDS 4 MI THICK
6	142210Z	17.1N	145.9E	54-P-05	70	60	9700	-	14/12	CIRC 15 MI DIA
7	150320Z	18.0N	146.0E	54-P-05	95	60	9560	981	17/11	DIA 12 MI,SATELLITE EYE SW DIA 5 MI
8	151000Z	19.2N	145.9E	VW1-R-02	-	-	-	-	- -	CIRC OPEN SE
9	151530Z	19.9N	145.8E	VW1-R-02	-	-	-	-	- -	ELLIP 19 MI N-S & 12 MI E-W
10	152145Z	21.1N	145.6E	54-P-03	150	120	8050	931	24/18	CIRC 10 MI DIA
11	160345Z	22.1N	145.2E	54-P-U	150	115	7830	916	25/-	CIRC 8 MI DIA
12	161000Z	23.0N	145.1E	VW1-R-05	-	-	-	-	- -	CIRC 11 MI DIA
13	161600Z	24.2N	144.9E	VW1-R-07	-	-	-	-	- -	CIRC 11 MI DIA,WALL CLDS 5 MI THICK
14	162200Z	25.5N	144.1E	54-P-04	170	-	8380	940	14/13	CIRC 10 MI DIA,OPEN E
15	170345Z	26.6N	143.8E	54-P-02	190	145	7890	919	16/15	CIRC 20 MI DIA
16	171000Z	28.0N	143.0E	VW1-R-01	-	-	-	-	- -	CIRC 10 MI DIA, 2ND CLOSED EYE 43 MI DIA

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

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
17	171610Z	29.2N	142.2E	VW1-R-05	-	-	-	-	- -	6 MI DIA,LGE EYE 45 MI DIA
18	172200Z	30.3N	142.1E	56-P-10	80	-	8740	950	12/12	CIRC 16 MI DIA,OUTER EYE 40 MI DIA
19	180400Z	30.7N	141.1E	56-P-03	90	90	8830	950	16/13	8X6 MI
20	181000Z	31.2N	140.9E	VW1-R-05	-	-	-	-	- -	31 MI DIA WELL DEFINED
21	181600Z	31.7N	140.7E	VW1-R-01	-	-	-	-	- -	CIRC 25 MI DIA
22	182215Z	32.1N	140.7E	56-P-02	75	75	9000	965	12/12	20X22 MI
23	190314Z	32.4N	140.7E	56-P-02	70	70	-	954	16/-	20X10 MI
24	191000Z	32.7N	140.8E	VW1-R-02	-	-	-	-	- -	CIRC 15 MI DIA
25	191500Z	32.8N	141.1E	VW1-R-03	-	-	-	-	- -	CIRC 23 MI DIA
26	192215Z	33.3N	141.3E	56-P-01	-	80	8800	955	15/11	CIRC 20 MI DIA
27	200000Z	33.6N	141.1E	LND/RDR	-	-	-	-	- -	---
28	200400Z	34.1N	141.3E	LND/RDR	-	-	-	-	- -	---
29	200815Z	34.5N	141.9E	56-P-02	85	80	8810	956	15/-	CIRC 15 MI DIA
30	210647Z	37.3N	144.9E	54-P-03	50	70	8870	957	14/12	OVAL 20 MI E-W/15 MI N-S
31	211000Z	37.6N	145.8E	VW1-R-05	-	-	-	-	- -	CIRC 14 MI DIA
32	211600Z	38.3N	147.7E	VW1-R-05	-	-	-	-	- -	CIRC 25 MI DIA
33	221500Z	41.0N	158.6E	VW1-R-10	-	-	-	-	- -	POORLY DEFINED

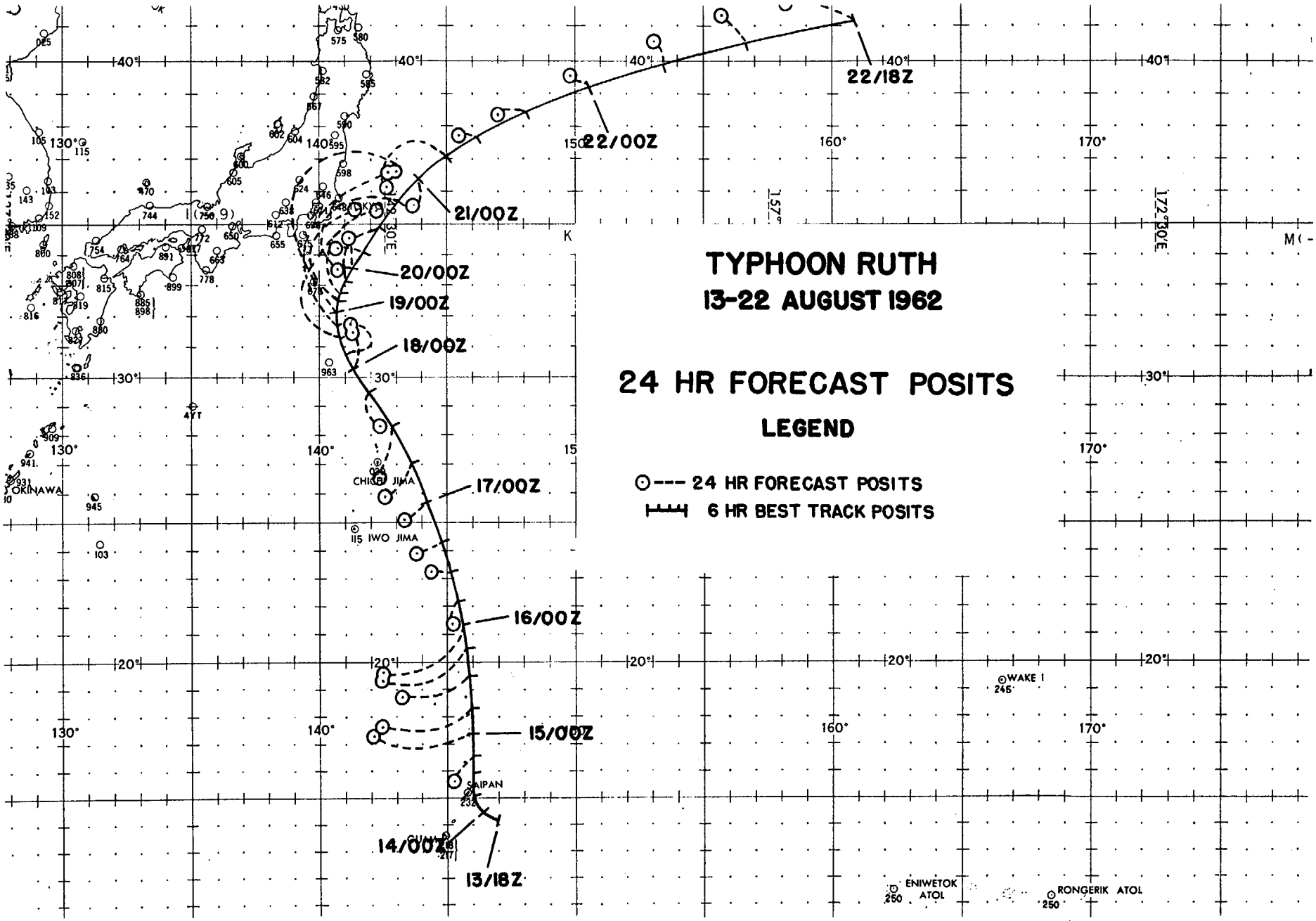
TYPHOON RUTH 13-22 AUG 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
131800Z	14.2N	147.0E	------	------
140000Z	14.5N	146.3E	------	------
140600Z	15.2N	146.0E	------	------
141200Z	16.0N	146.0E	------	------
141800Z	16.8N	146.0E	------	------
150000Z	17.5N	146.0E	264-227	------
150600Z	18.4N	146.0E	257-201	------
151200Z	19.6N	145.9E	256-166	------
151800Z	20.6N	145.8E	247-197	------
160000Z	21.4N	145.6E	239-204	249-372
160600Z	22.3N	145.3E	183-55	241-367
161200Z	23.3N	145.0E	270-37	243-364
161800Z	24.4N	144.7E	239-48	237-403
170000Z	25.8N	144.2E	230-68	237-388
170600Z	27.1N	143.6E	220-84	187-125
171200Z	28.4N	142.8E	192-110	184-147
171800Z	29.6N	141.8E	159-73	175-176
180000Z	30.4N	141.3E	350-73	193-48
180600Z	30.9N	141.0E	005-60	193-32
181200Z	31.3N	140.8E	017-252	025-25
181800Z	31.8N	140.7E	018-310	023-138
190000Z	32.2N	140.7E	022-312	031-438
190600Z	32.6N	140.8E	011-168	033-448
191200Z	32.8N	140.9E	358-78	032-825
191800Z	33.2N	141.0E	003-90	041-900
200000Z	33.6N	141.3E	352-65	034-720
200600Z	34.2N	141.7E	292-42	033-438
201200Z	35.0N	142.3E	253-60	105-139
201800Z	35.8N	143.0E	223-162	026-274

TYPHOON RUTH 13-22 AUG 1962 (CONT'D)
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
210000Z	36.5N	143.9E	240-117	015-187
210600Z	37.2N	145.0E	247-114	267-104
211200Z	37.8N	146.2E	270-42	275-120
211800Z	38.6N	148.0E	258-49	247-294
220000Z	39.4N	150.4E	308-31	247-364
220600Z	40.1N	153.3E	343-42	253-392
221200Z	40.7N	156.6E	313-50	269-202
221800Z	41.3N	160.8E	289-122	273-278

AVERAGE 24 HOUR ERROR 115.9 MI
AVERAGE 48 HOUR ERROR 311.0 MI


TYPHOON RUTH
13-22 AUGUST 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
22/18Z
22/00Z
21/00Z
20/00Z
19/00Z
18/00Z
17/00Z
16/00Z
15/00Z
14/00Z
13/18Z
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
WAKE I
ENIWETOK ATOL
RONGERIK ATOL

TYPHOON SARAH - 150600Z-221800Z AUGUST 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 7½

2. Calendar days of typhoon intensity - 4

3. Total distance traveled during tropical warning period - 1320 MI

B. Characteristics as a typhoon

1. Min observed SLP - 978mb, 180400Z

2. Min observed 850mb height - 4260 ft, 180400Z

3. Min observed 700mb height - 9480 ft, 180400Z

4. Max vertical development - 30,000 ft, 180000Z

II. DEVELOPMENT

A. Initial impetus - Surge from westerlies into easterlies. Fracture following superposition of polar trough and easterly wave.

B. Initial surface vortex

1. Induced low at 081800Z

2. Surface pressure less than 1013mb

3. Maximum surface wind - 5 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone

2. Wind velocity over vortex - 080/25 kts

III. STEERING

A. Prior to recurvature - 200mb

B. During recurvature - 200mb

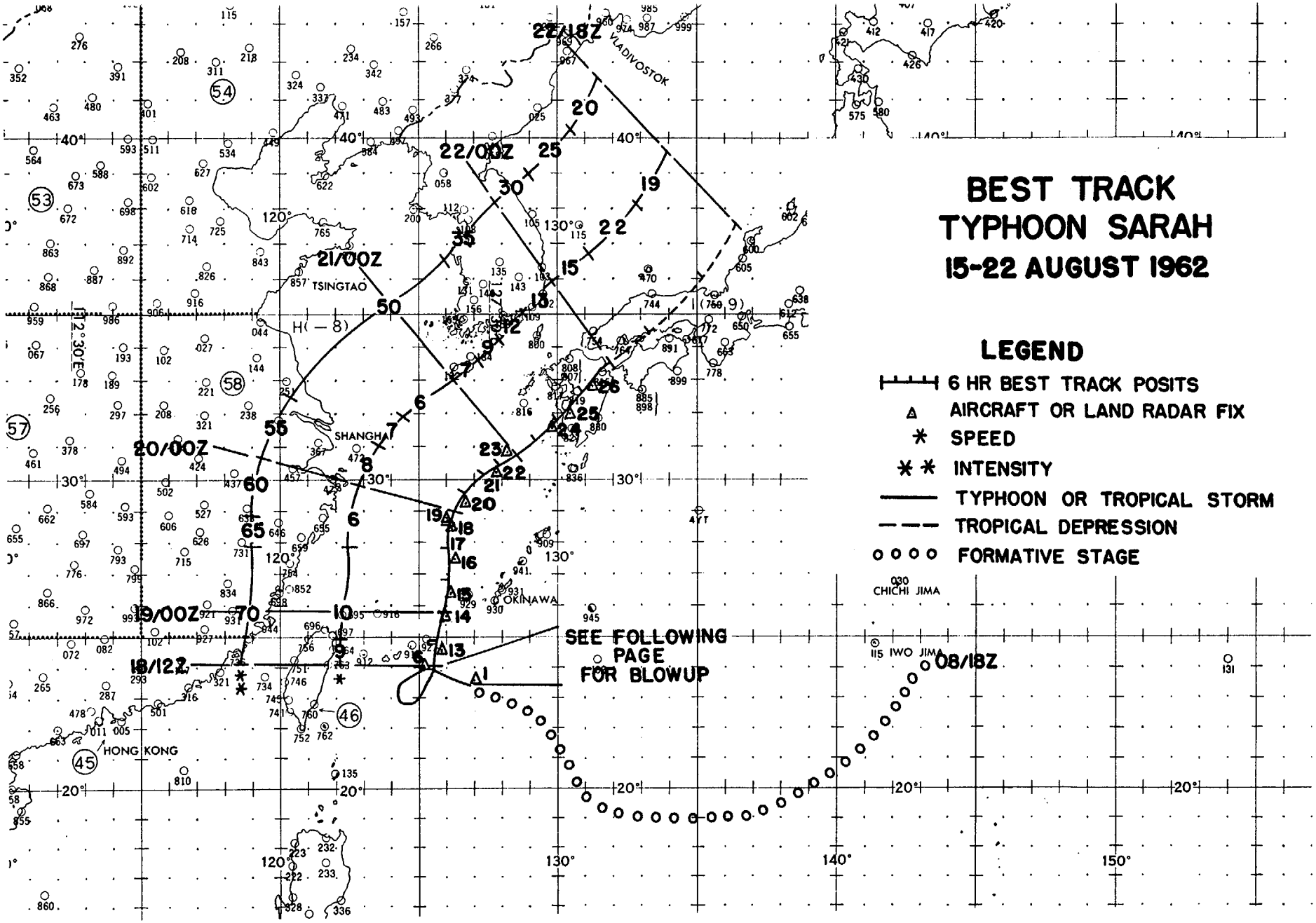
C. After recurvature - 200mb

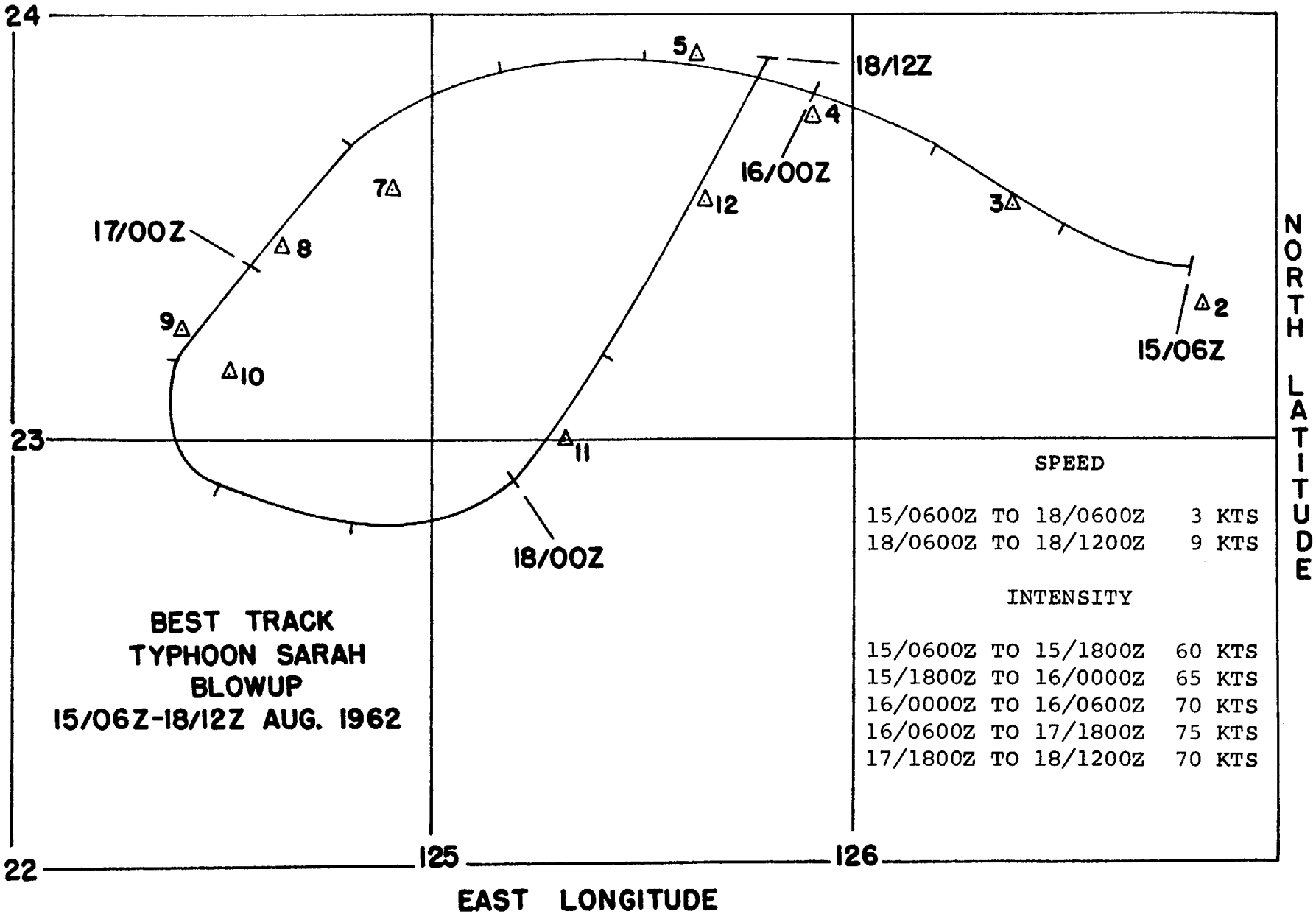
IV. DISSIPATION

A. Causative factor - Cold air and land strike

B. Final disposition - Extratropical

V. DAMAGE - No reports received


BEST TRACK
TYPHOON SARAH
15-22 AUGUST 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
SEE FOLLOWING PAGE FOR BLOWUP
VLADIVOSTOK
TSINGTAO
SHANGHAI
OKINAWA
HONG KONG
CHICHI JIMA
IWO JIMA
22/18Z
22/00Z
21/00Z
20/00Z
19/00Z
18/12Z
08/18Z
H(-8)
I(-9)
40°
30°
20°
120°
130°
140°
150°
122°30'E


24
23
22
125
126
EAST LONGITUDE
NORTH LATITUDE
18/12Z
16/00Z
17/00Z
18/00Z
15/06Z
5
4
3
2
7
8
9
10
11
12
BEST TRACK
TYPHOON SARAH
BLOWUP
15/06Z-18/12Z AUG. 1962
SPEED
15/0600Z TO 18/0600Z 3 KTS
18/0600Z TO 18/1200Z 9 KTS
INTENSITY
15/0600Z TO 15/1800Z 60 KTS
15/1800Z TO 16/0000Z 65 KTS
16/0000Z TO 16/0600Z 70 KTS
16/0600Z TO 17/1800Z 75 KTS
17/1800Z TO 18/1200Z 70 KTS

LAND RADAR AND AIRCRAFT FIXES - TYPHOON SARAH

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	150200Z	23.4N	127.0E	LND/RDR	-	-	-	-	- -	HAS SPIRAL BANDS
2	150645Z	23.3N	126.8E	USN-P-U	60	-	-	-	- -	DIA 14 MI
3	151400Z	23.6N	126.4E	LND/RDR	-	-	-	-	- -	---
4	152317Z	23.8N	125.9E	56-P-01	110	45	9800	981	12/11	CIRC 10 MI DIA
5	160345Z	23.9N	125.7E	56-P-01	125	-	9730	998	13/12	CIRC 18 MI DIA
6	161300Z	24.1N	125.2E	LND/RDR	-	-	-	-	- -	14 MI DIA
7	161845Z	23.6N	124.9E	LND/RDR	-	-	-	-	- -	---
8	162345Z	23.5N	124.6E	LND/RDR	-	-	-	-	- -	---
9	170335Z	23.3N	124.4E	56-P-02	75	65	9490	980	14/10	CIRC 25 MI DIA,WALL CLDS 10 MI THICK
10	171530Z	23.2N	124.5E	LND/RDR	-	-	-	-	- -	30 MI DIA
11	180400Z	23.0N	125.3E	56-P-03	65	60	9480	978	16/14	CIRC 50 MI DIA
12	181000Z	23.6N	125.7E	LND/RDR	-	-	-	-	- -	---
13	181600Z	24.5N	125.8E	LND/RDR	-	-	-	-	- -	---
14	182300Z	25.7N	126.0E	LND/RDR	-	-	-	-	- -	---
15	190403Z	26.4N	126.1E	56-P-02	75	65	9670	983	14/14	ELLIP 20X15 MI
16	191000Z	27.5N	126.2E	VW1-R-10	-	-	-	-	- -	OPEN E SEMICIRCLE
17	191600Z	28.6N	126.0E	VW1-R-03	-	-	-	-	- -	32 MI DIA,OPEN E
18	191830Z	28.4N	126.2E	LND/RDR	-	-	-	-	- -	21 MI DIA
19	192222Z	28.8N	126.0E	54-P-06	50	60	9680	986	13/13	OVAL 35 MI E-W/25 MI N-S

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

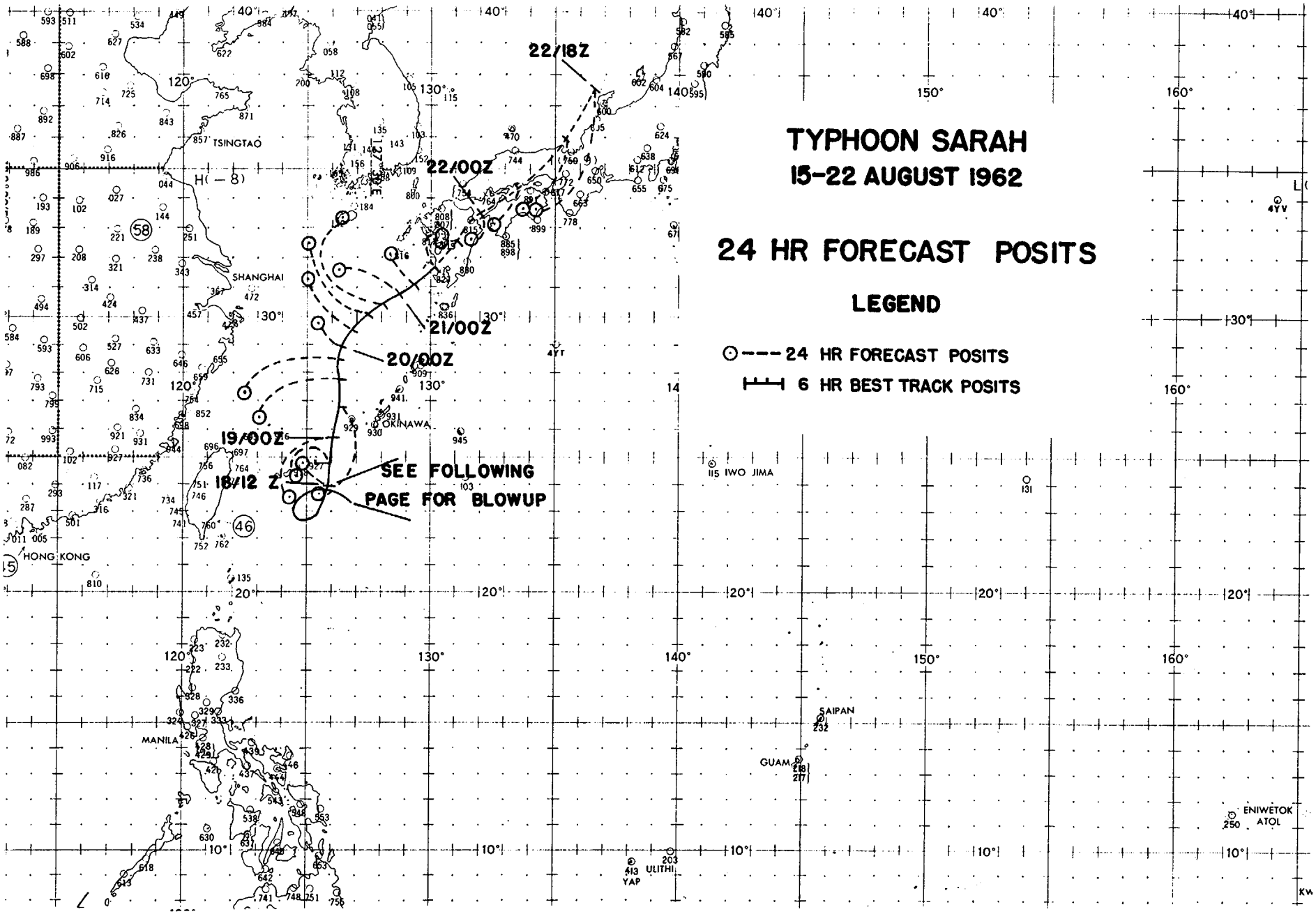
FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
20	200305Z	29.3N	126.7E	54-P-05	40	50	9930	978	19/16	OPEN N TO E
21	201000Z	30.1N	127.3E	VW1-P-05	50	-	-	978	- -	CIRC 25 MI DIA,OPEN E
22	201600Z	30.3N	127.8E	VW1-R-03	-	-	-	-	- -	CIRC 32 MI DIA
23	210000Z	30.8N	128.3E	LND/RDR	-	-	-	-	- -	---
24	211100Z	31.7N	129.8E	LND/RDR	-	-	-	-	- -	---
25	211400Z	32.0N	130.3E	LND/RDR	-	-	-	-	- -	---
26	211930Z	32.8N	131.2E	LND/RDR	-	-	-	-	- -	---

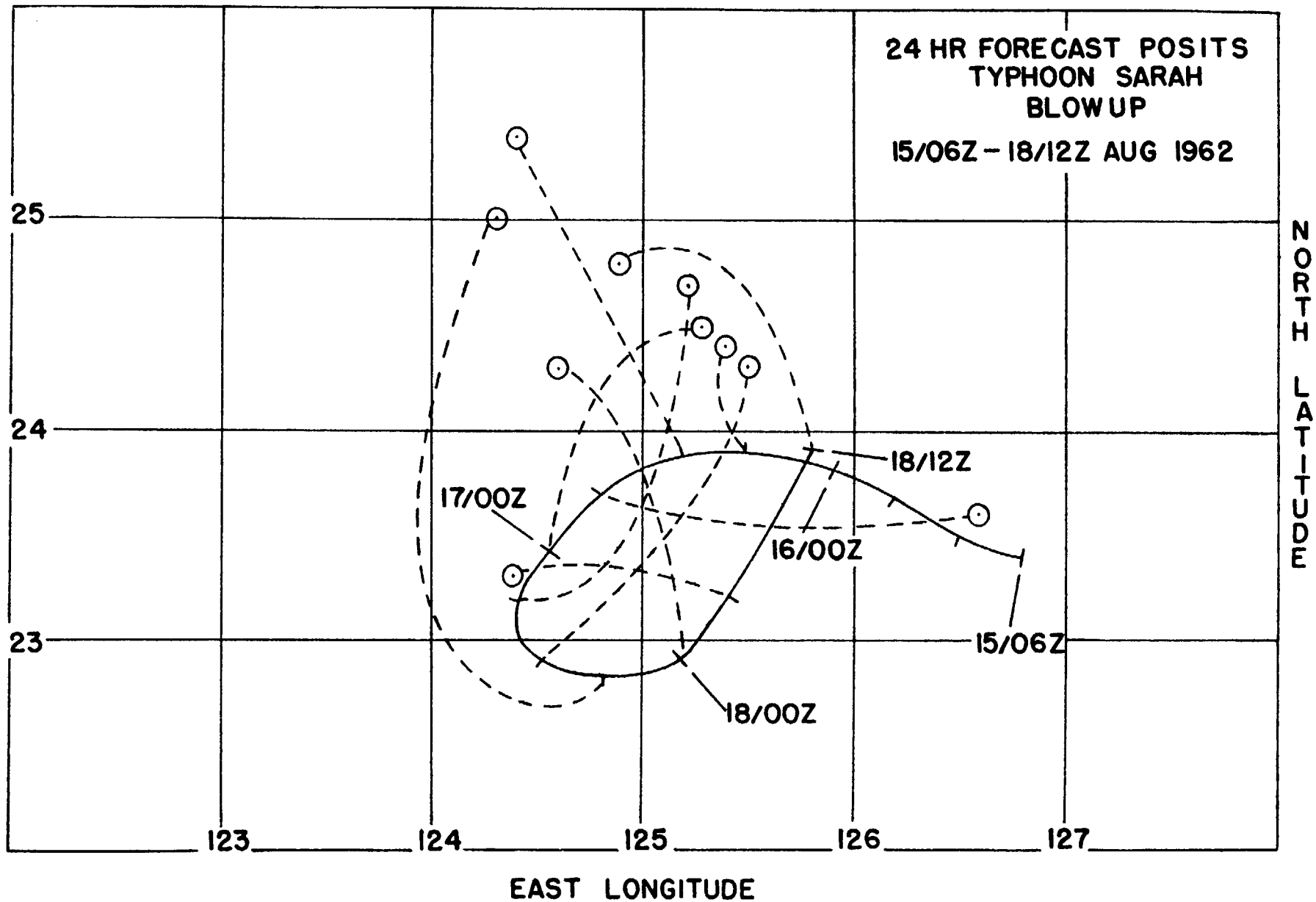
TYPHOON SARAH 15-22 AUG 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
150600Z	23.4N	126.8E	------	------
151200Z	23.5N	126.5E	------	------
151800Z	23.7N	126.2E	------	------
160000Z	23.8N	125.9E	------	------
160600Z	23.9N	125.5E	340-28	------
161200Z	23.8N	125.2E	330-101	------
161800Z	23.7N	124.8E	094-95	------
170000Z	23.4N	124.6E	030-70	------
170600Z	23.2N	124.4E	026-80	347-230
171200Z	22.9N	124.5E	032-100	345-370
171800Z	22.8N	124.8E	354-127	348-170
180000Z	22.9N	125.2E	341-85	338-265
180600Z	23.2N	125.4E	282-48	334-265
181200Z	23.9N	125.8E	315-75	327-260
181800Z	24.8N	125.9E	241-80	323-283
190000Z	25.8N	126.0E	208-168	302-165
190600Z	26.8N	126.1E	191-210	240-115
191200Z	27.8N	126.1E	243-185	259-185
191800Z	28.4N	126.1E	250-212	242-197
200000Z	29.0N	126.3E	315-75	204-260
200600Z	29.6N	126.8E	316-137	210-290
201200Z	30.1N	127.4E	320-190	253-470
201800Z	30.4N	128.0E	334-185	253-535
210000Z	30.8N	128.5E	295-130	334-345
210600Z	31.2N	129.2E	318-80	342-400
211200Z	31.8N	130.0E	017-67	340-400
211800Z	32.6N	131.0E	261-27	340-328
220000Z	33.6N	132.0E	198-60	292-250
220600Z	34.5N	133.4E	215-102	285-138
221200Z	36.0N	135.3E	213-165	224-174
221800Z	37.7N	136.5E	208-265	225-270

TYPHOON SARAH 15-22 AUG 1962
POSITION AND FORECAST VERIFICATION DATA

AVERAGE 24 HOUR ERROR 116.6 MI
AVERAGE 48 HOUR ERROR 276.7 MI


TYPHOON SARAH
15-22 AUGUST 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
22/18Z
22/00Z
21/00Z
20/00Z
19/00Z
18/12 Z
SEE FOLLOWING PAGE FOR BLOWUP
TSINGTAO
SHANGHAI
OKINAWA
HONG KONG
MANILA
IWO JIMA
SAIPAN
GUAM
ULITHI
YAP
ENIWETOK ATOL


24 HR FORECAST POSITS
TYPHOON SARAH
BLOW UP
15/06Z - 18/12Z AUG 1962
25
24
23
123
124
125
126
127
NORTH LATITUDE
EAST LONGITUDE
18/12Z
17/00Z
16/00Z
15/06Z
18/00Z

TYPHOON THELMA - 210000Z-270600Z AUGUST 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 6¼

2. Calendar days of typhoon intensity - 3¼

3. Total distance traveled during tropical warning period - 1824 MI

B. Characteristics as a typhoon

1. Min observed SLP - 946mb, 230345Z

2. Min observed 850mb height - 3865 ft, 250300Z

3. Min observed 700mb height - 8540 ft, 250300Z

4. Max vertical development - 35,000 ft, 250000Z

II. DEVELOPMENT

A. Initial impetus - Data inconclusive on surge from westerlies. Fractured portion of MPT became easterly wave.

B. Initial surface vortex

1. Embedded and junction vortex at 200000Z

2. Both vortices had surface pressures of less than 1010mb.

3. Maximum surface wind - 10 kts

4. At 201800Z the embedded vortex had become dominate; both the easterly wave and the junction vortex had dissipated.

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone

2. Wind velocity over vortex - 045/20 kts

III. STEERING

A. Prior to recurvature - 500mb

B. During recurvature - 500mb

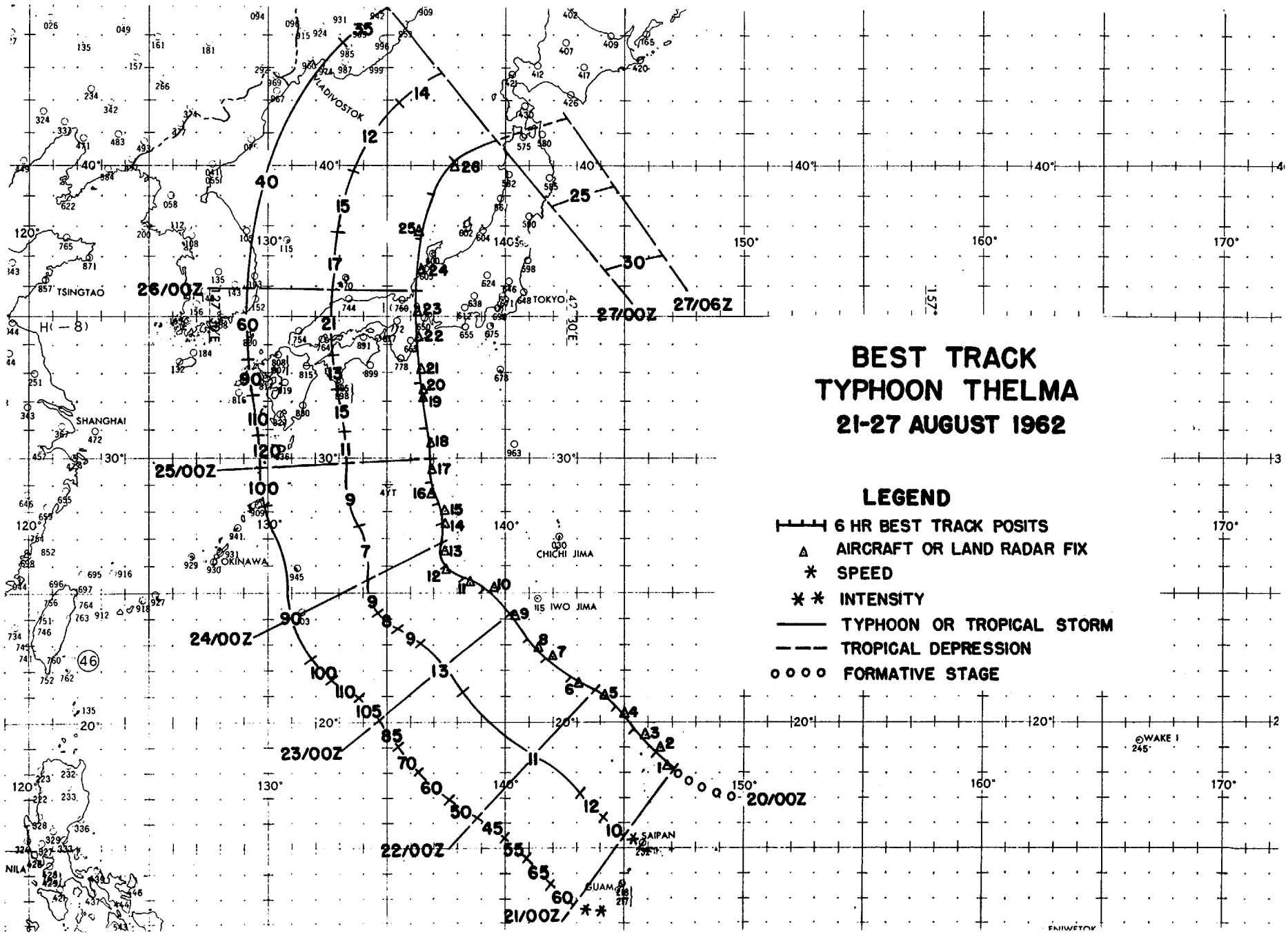
C. After recurvature - 500mb

IV. DISSIPATION

A. Causative factor - Land strike and cold air

B. Final disposition - Extratropical

V. DAMAGE - No reports received


BEST TRACK
TYPHOON THELMA
21-27 AUGUST 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
VLADIVOSTOK
TSINGTAO
SHANGHAI
OKINAWA
TOKYO
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
WAKE I
ENIWETOK
NILA
H(-8)
26/00Z
25/00Z
24/00Z
23/00Z
22/00Z
21/00Z
20/00Z
27/00Z
27/06Z

LAND RADAR AND AIRCRAFT FIXES - TYPHOON THELMA

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	210154Z	18.4N	146.8E	54-P-U	65	-	-	999	- -	CIRC 15 MI DIA
2	210600Z	19.0N	146.5E	54-P-½	70	55	10080	992	16/14	CIRC 20 MI DIA,OPEN S
3	211000Z	19.5N	145.8E	VW1-R-05	-	-	-	-	- -	18 MI DIA
4	211530Z	20.3N	145.0E	VW1-R-05	-	-	-	-	- -	POORLY DEFINED
5	212210Z	21.0N	144.1E	54-P-03	45	40	10070	-	16/10	CIRC 20 MI DIA,OPEN SE-W
6	220355Z	21.6N	143.0E	54-P-05	50	48	9970	-	15/09	CIRC 12 MI DIA
7	220952Z	22.5N	142.0E	VW1-R-05	-	-	-	-	- -	CIRC 16 MI DIA,OPEN N&E
8	221500Z	22.9N	141.4E	VW1-R-05	-	-	-	-	- -	CIRC 23 MI DIA
9	222145Z	24.1N	140.4E	54-P-02	60	80	9420	975	15/09	ELLIP 18X20 MI
10	230345Z	25.1N	139.5E	54-P-02	100	100	8750	946	22/09	CIRC 14 MI DIA
11	231000Z	25.4N	138.5E	VW1-R-03	-	-	-	-	- -	CIRC 12 MI DIA
12	231600Z	25.8N	137.5E	VW1-R-05	-	-	-	-	- -	CIRC 20 MI DIA
13	232152Z	26.6N	137.4E	54-P-04	70	85	9040	959	18/15	DIA 10 MI
14	240410Z	27.7N	137.4E	54-P-06	80	-	8990	-	15/15	CIRC 12 MI DIA
15	240947Z	28.0N	137.4E	VW1-R-05	-	-	-	-	- -	CONCENTRIC INNER DIA 9 MI OUTER DIA 18 MI
16	241545Z	28.7N	136.9E	VW1-R-03	-	-	-	-	- -	DIA 18 MI,OPEN SW
17	242115Z	29.6N	136.9E	56-P-02	120	60	8710	950	15/13	DIA 20 MI
18	250300Z	30.5N	136.9E	54-P-04	120	120	8540	947	13/09	DIA 20 MI
19	251000Z	32.1N	136.6E	VW1-R-03	-	-	-	-	- -	DIA 16 MI,OPEN S
20	251200Z	32.4N	136.5E	LND/RDR	-	-	-	-	- -	---

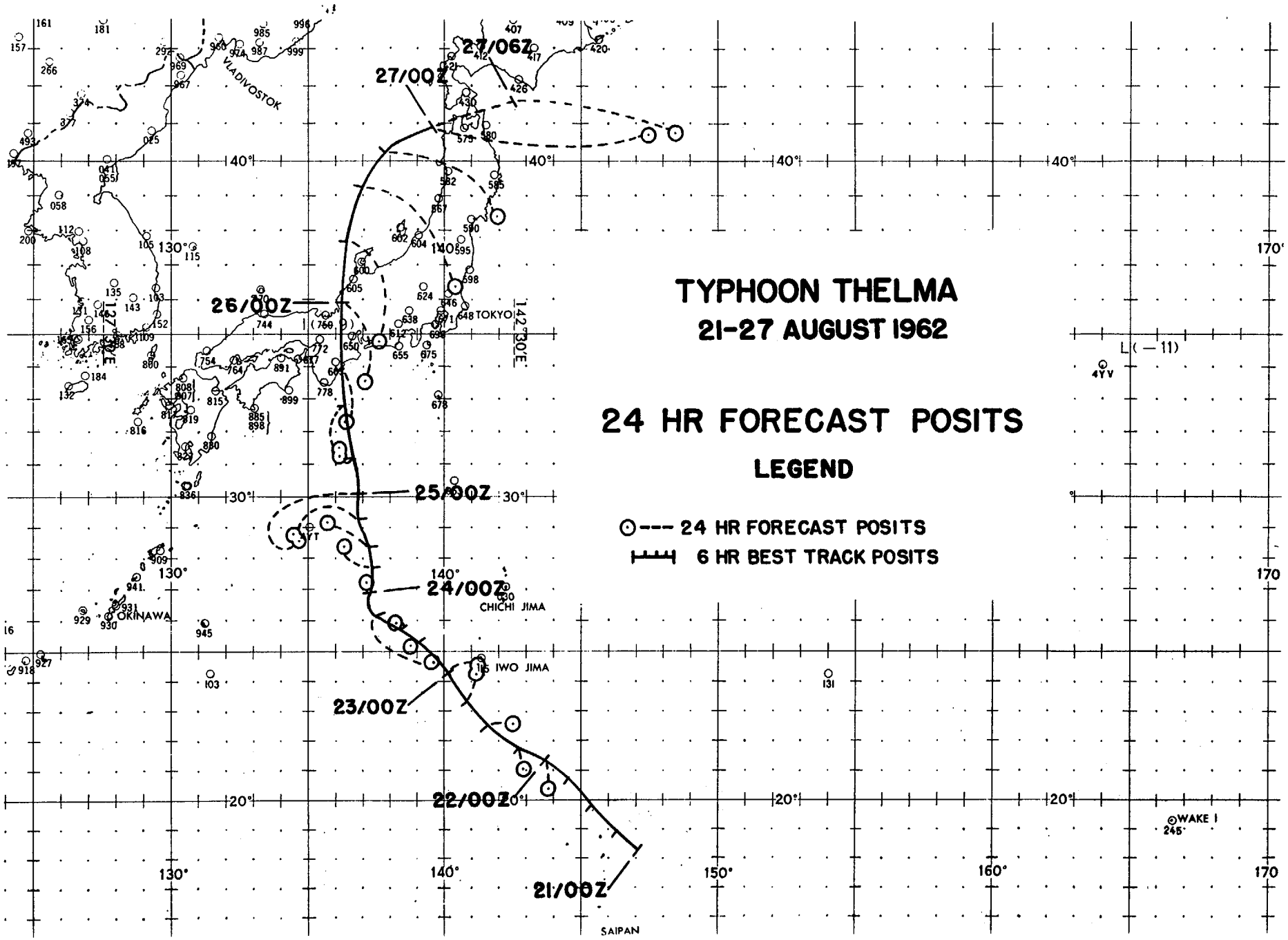
LAND RADAR AND AIRCRAFT FIXES - TYPHOON THELMA (CONT'D)

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
21	251500Z	33.2N	136.4E	LND/RDR	-	-	-	-	- -	---
22	251900Z	34.2N	136.3E	LND/RDR	-	-	-	-	- -	---
23	252200Z	35.3N	136.2E	LND/RDR	-	-	-	-	- -	---
24	260200Z	36.5N	136.4E	LND/RDR	-	-	-	-	- -	---
25	260652Z	37.8N	136.4E	56-P-01	-	45	10150	1001	12/11	DIA 70 MI
26	261730Z	40.0N	137.9E	LND/RDR	-	-	-	-	- -	---

TYPHOON THELMA 21-27 AUG 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
210000Z	18.2N	147.1E	------	------
210600Z	18.9N	146.4E	------	------
211200Z	19.8N	145.5E	------	------
211800Z	20.6N	144.6E	------	------
220000Z	21.2N	143.8E	170-47	------
220600Z	21.8N	142.7E	165-53	------
221200Z	22.5N	141.8E	075-42	------
221800Z	23.3N	141.0E	010-51	------
230000Z	24.3N	140.2E	075-38	155-150
230600Z	25.2N	139.1E	260-09	155-137
231200Z	25.5N	138.2E	360-26	075-97
231800Z	26.0N	137.4E	125-143	040-110
240000Z	26.9N	137.4E	345-25	080-80
240600Z	27.7N	137.5E	305-70	305-82
241200Z	28.3N	137.3E	305-88	310-100
241800Z	29.1N	136.9E	265-134	170-122
250000Z	30.0N	136.9E	230-142	265-72
250600Z	31.1N	136.8E	295-38	265-87
251200Z	32.6N	136.4E	195-73	240-87
251800Z	33.8N	136.3E	175-87	225-184
260000Z	35.9N	136.2E	165-152	205-320
260600Z	37.6N	136.4E	160-175	128-148
261200Z	39.1N	137.0E	135-222	165-205
261800Z	40.1N	137.9E	115-214	160-217
270000Z	40.9N	139.4E	095-373	160-241
270600Z	41.5N	142.5E	095-274	160-221

AVERAGE 24 HOUR ERROR 112.5 MI
AVERAGE 48 HOUR ERROR 147.8 MI


TYPHOON THELMA
21-27 AUGUST 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
27/06Z
27/00Z
26/00Z
25/00Z
24/00Z
23/00Z
22/00Z
21/00Z
VLADIVOSTOK
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
WAKE I
127°E
142°30'E
130°
140°
150°
160°
170
40°
30°
20°

TYPHOON VERA - 250600Z-280600Z AUGUST 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 3
2. Calendar days of typhoon intensity - 1¼
3. Total distance traveled during tropical warning period - 756 MI

B. Characteristics as a typhoon

1. Min observed SLP - 983mb, 260330Z
2. Min observed 850mb height - 4455 ft, 260330Z
3. Min observed 700mb height - 9730 ft, 260330Z
4. Max vertical development - 30,000 ft, 261200Z

II. DEVELOPMENT

A. Initial impetus - Superposition and fracture of polar trough and easterly wave at the 200mb level. Surge in easterlies following fracture on the 200mb level.

B. Initial surface vortex

1. Embedded in ITC at 230600Z
2. Surface pressure less than 1008mb
3. Maximum surface wind - 10 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone
2. Wind velocity over vortex - 080/20 kts

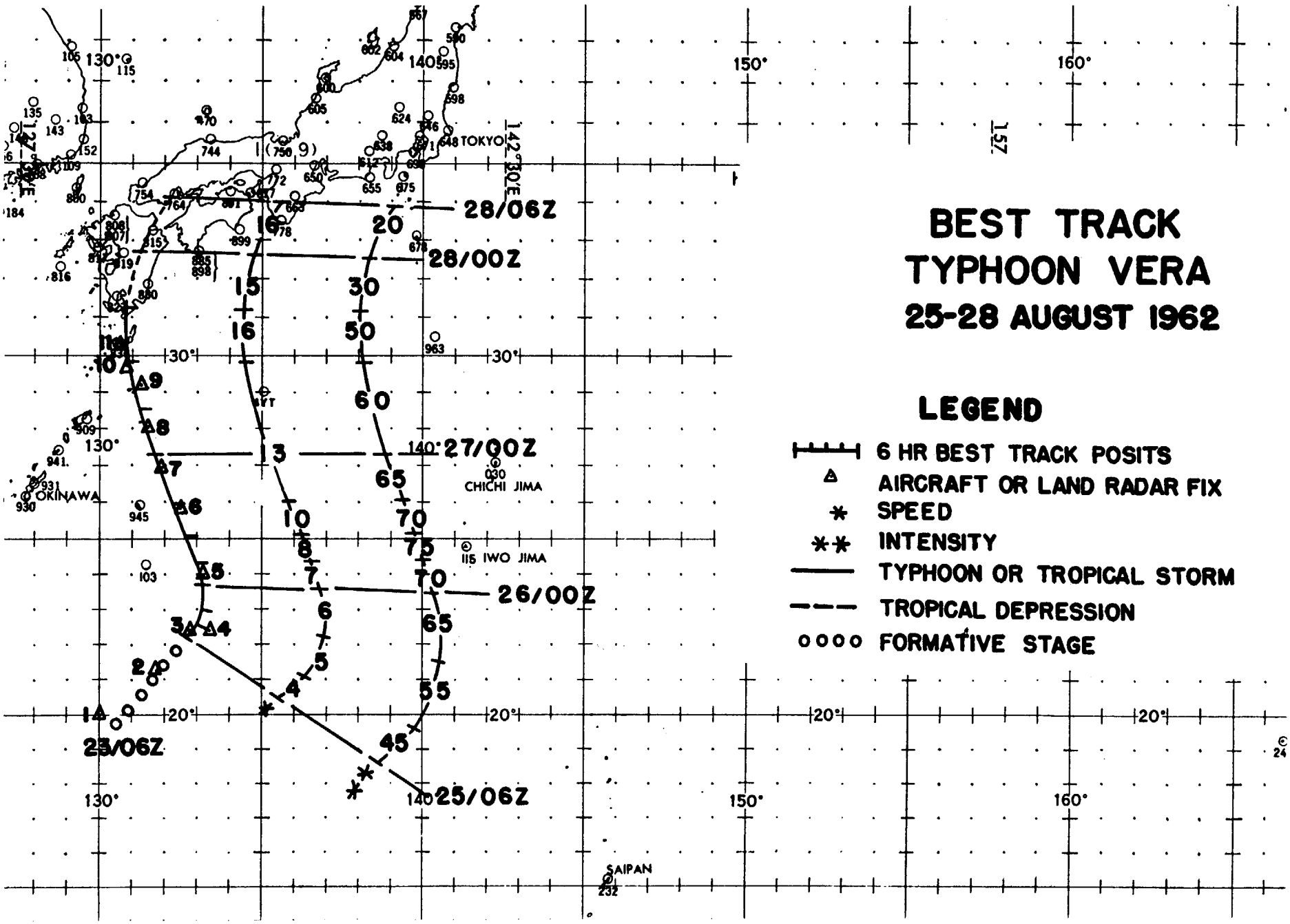
III. STEERING

A. Prior to recurvature - 500mb
B. During recurvature - 500mb
C. After recurvature - 500mb

IV. DISSIPATION

A. Causative factor - Land strike and cold air
B. Final disposition - Dissipated over land

V. DAMAGE - No reports received


BEST TRACK
TYPHOON VERA
25-28 AUGUST 1962
LEGEND
6 HR 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
28/06Z
28/00Z
27/00Z
26/00Z
25/06Z
23/06Z
130°
140°
150°
160°
20°
30°

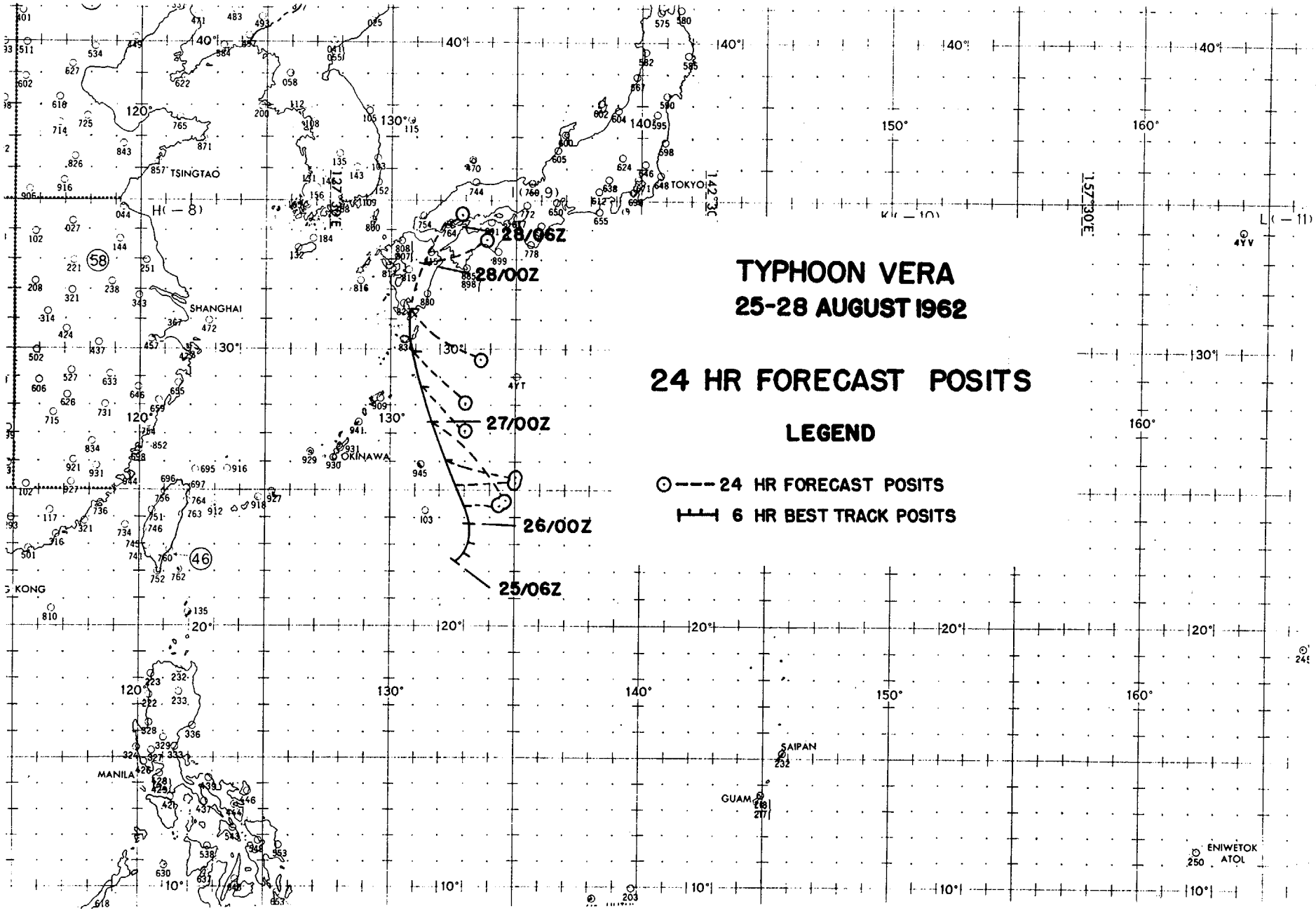
LAND RADAR AND AIRCRAFT FIXES - TYPHOON VERA

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	231800Z	20.0N	130.0E	VW1-P-U	-	-	-	-	- -	WEAK ORGANIZED CLD PATTERN
2	241148Z	21.4N	131.8E	VW1-P-05	-	-	10305	-	- -	FEEDER BANDS FORMED SW TO NE
3	250654Z	22.4N	132.8E	54-P-U	45	-	10150	996	- -	CIRC 20 MI DIA, WALL CLDS ALL QUADS
4	251240Z	22.2N	133.3E	VW1-R-03	-	-	-	-	- -	DIA 11 MI, OPEN N
5	260330Z	24.0N	133.1E	54-P-03	75	60	9730	983	10/09	DIA 5 MI
6	261630Z	25.8N	132.3E	VW1-R-03	-	-	-	-	- -	DIA 5 MI, WEAK NW
7	262200Z	26.9N	131.9E	54-P-02	70	60	9780	984	16/12	---
8	270315Z	28.0N	131.4E	54-P-02	55	55	9960	983	15/12	ELLIP MAJOR AXIS N-S, 25 MI DIA
9	270900Z	29.2N	131.2E	LND/RDR	-	-	-	-	- -	---
10	271200Z	29.7N	130.8E	LND/RDR	-	-	-	-	- -	---
11	271500Z	30.3N	130.6E	VW1-R-03	-	-	-	-	- -	DIA 70 MI, VERY DIFFUSE

TYPHOON VERA 25-28 AUG 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24-HR. ERROR DEG. DISTANCE	48-HR. ERROR DEG. DISTANCE
250600Z	22.3N	132.7E	------	------
251200Z	22.6N	133.0E	------	------
251800Z	23.0N	133.3E	------	------
260000Z	23.7N	133.2E	------	------
260600Z	24.3N	133.0E	089-84	------
261200Z	25.1N	132.7E	086-128	------
261800Z	26.0N	132.3E	111-169	------
270000Z	27.3N	131.7E	136-227	------
270600Z	28.5N	131.3E	132-133	095-240
271200Z	29.8N	130.9E	132-158	094-265
271800Z	31.3N	130.7E	135-144	117-296
280000Z	32.7N	131.4E	068-137	154-460
280600Z	34.1N	132.2E	083-33	176-433

AVERAGE 24 HOUR ERROR 134.8 MI
AVERAGE 48 HOUR ERROR 338.8 MI


TYPHOON VERA
25-28 AUGUST 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
28/06Z
28/00Z
27/00Z
26/00Z
25/06Z
TSINGTAO
SHANGHAI
OKINAWA
TOKYO
MANILA
SAIPAN
GUAM
ENIWETOK ATOL
H(-8)
L(-11)
157°30'E
142°30'E

TYPHOON WANDA - 271200Z AUGUST-011800Z SEPTEMBER 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 5¼

2. Calendar days of typhoon intensity - 3¼

3. Total distance traveled during tropical warning period - 1434 MI

B. Characteristics as a typhoon

1. Min observed SLP - 949mb, 310930Z

2. Min observed 850mb height - 3500 ft, 310930Z

3. Min observed 700mb height - 8840 ft, 310930Z

4. Max vertical development - 35,000 ft, 311200Z

II. DEVELOPMENT

A. Initial impetus - Superposition and fracture of MPT and easterly wave on the 200mb level followed by surge in easterlies apparently originating from Southern Hemisphere outdraft on the 200mb level.

B. Initial surface vortex

1. Junction vortex at 230000Z

2. Surface pressure less than 1011mb

3. Maximum surface wind - 10 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - NE quadrant of Southern Hemisphere anticyclone

2. Wind velocity over vortex - 120/15 kts

III. STEERING

A. Prior to recurvature - 500mb

B. During and after recurvature - NA

IV. DISSIPATION

A. Causative factor - Land strike and cold air

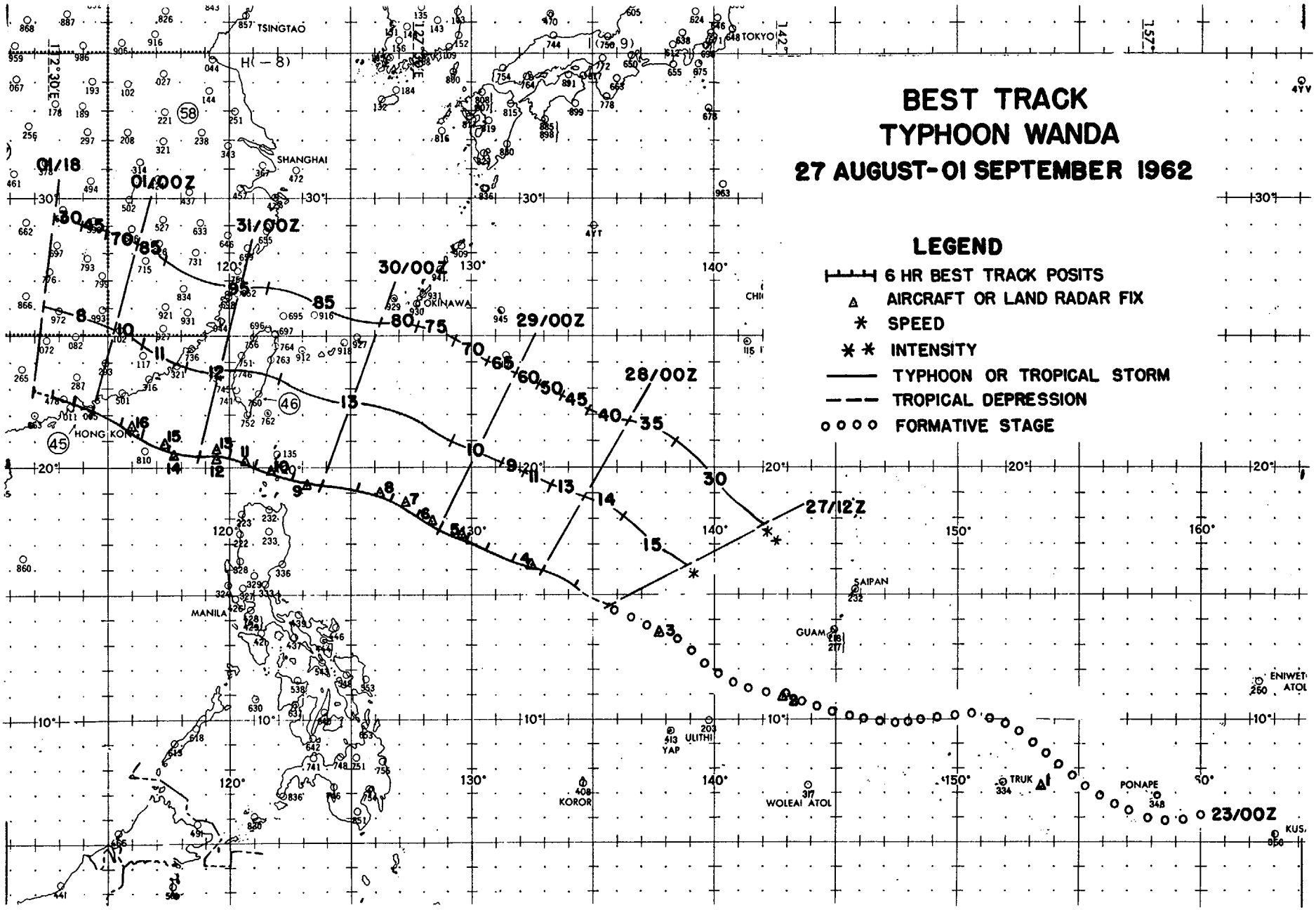
B. Final disposition - Dissipated over land

V. DAMAGE

A. Total lives lost - 434

B. Total monetary value - Millions of dollars

C. Types of property - Ships, boats, buildings, cars, power and communication lines


BEST TRACK
TYPHOON WANDA
27 AUGUST-01 SEPTEMBER 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
HONG KONG
MANILA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
01/18
01/00Z
31/00Z
30/00Z
29/00Z
28/00Z
27/12Z
23/00Z

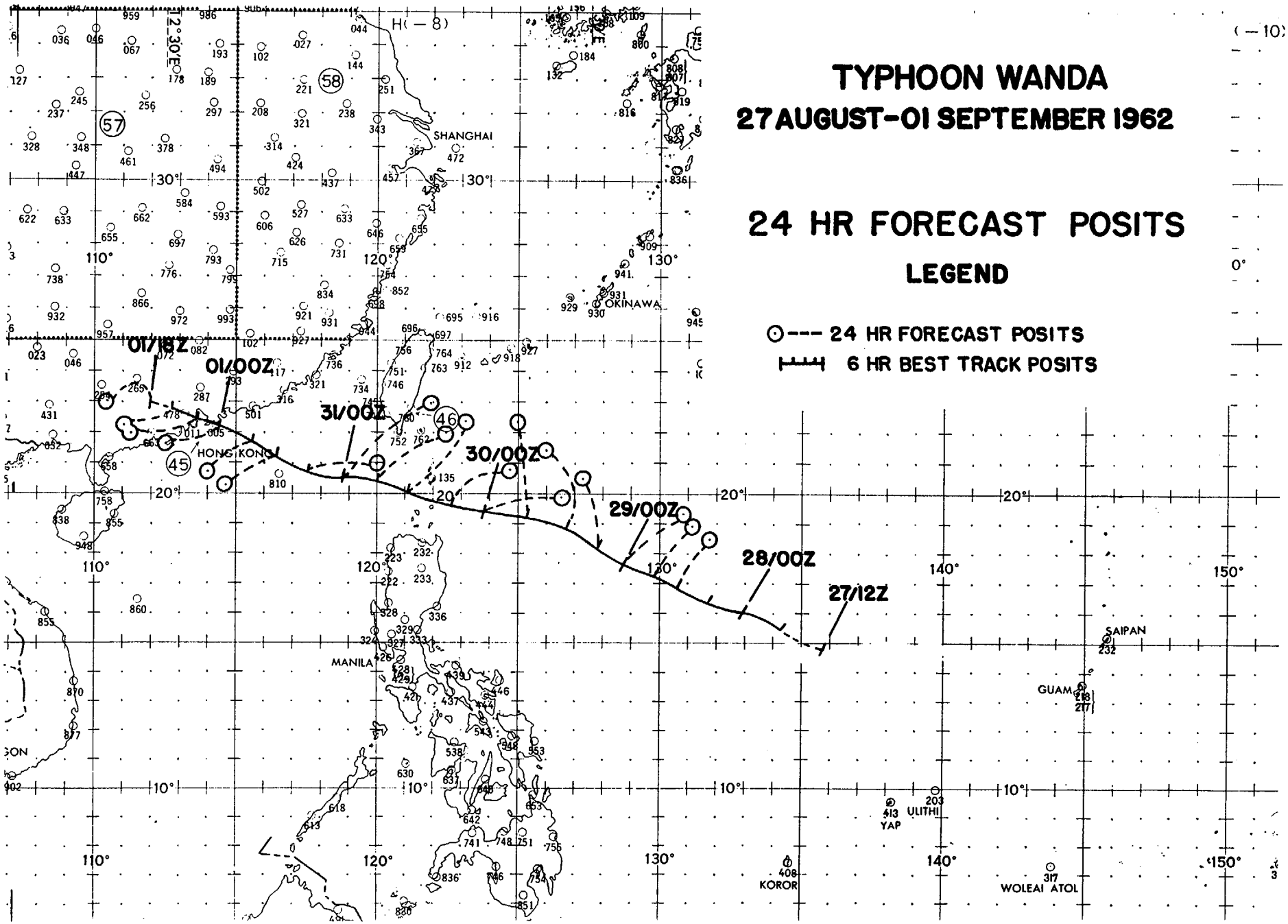
LAND RADAR AND AIRCRAFT FIXES - TYPHOON WANDA

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	240415Z	07.2N	153.5E	VW1-P-20	10	-	-	1005	- -	---
2	260345Z	10.8N	142.8E	VW1-P-30	15	-	-	1001	- -	---
3	270300Z	13.5N	137.7E	VW1-P-U	25	-	-	1000	- -	90 MI E-W & 50 MI N-S
4	280211Z	16.2N	132.5E	VW1-P-03	40	-	9745	-	13/07	CIRC 55 MI DIA
5	282300Z	17.4N	129.7E	54-P-03	60	55	9870	992	14/-	CIRC 8 MI DIA
6	290330Z	17.9N	128.3E	54-P-03	65	55	9870	984	15/10	CIRC 20 MI DIA
7	290945Z	18.6N	127.1E	VW1-R-10	-	-	-	-	- -	DIA 20 MI,OPEN N,S&W
8	291600Z	19.0N	126.1E	VW1-R-10	-	-	-	-	- -	DIA 20 MI,OPEN W
9	300334Z	19.4N	123.1E	54-P-02	80	82	9510	982	14/10	CIRC 25 MI DIA
10	301020Z	19.9N	121.6E	VW1-P-05	80	-	9216	-	16/12	CIRC 32 MI DIA
11	301415Z	20.2N	120.6E	LND/RDR	-	-	-	-	- -	---
12	301815Z	20.3N	119.5E	LND/RDR	-	-	-	-	- -	---
13	302200Z	20.6N	119.5E	54-P-03	80	85	9120	970	16/14	CIRC 30 MI DIA,OPEN N-E
14	310400Z	20.4N	117.8E	54-P-03	85	70	9100	970	17/13	CIRC 30 MI DIA
15	310930Z	20.9N	117.4E	VW1-P-03	80	-	8840	949	16/15	CIRC 5 MI DIA
16	311530Z	21.5N	116.0E	VW1-R-05	-	-	-	-	- -	CIRC 23 MI DIA,OPEN W

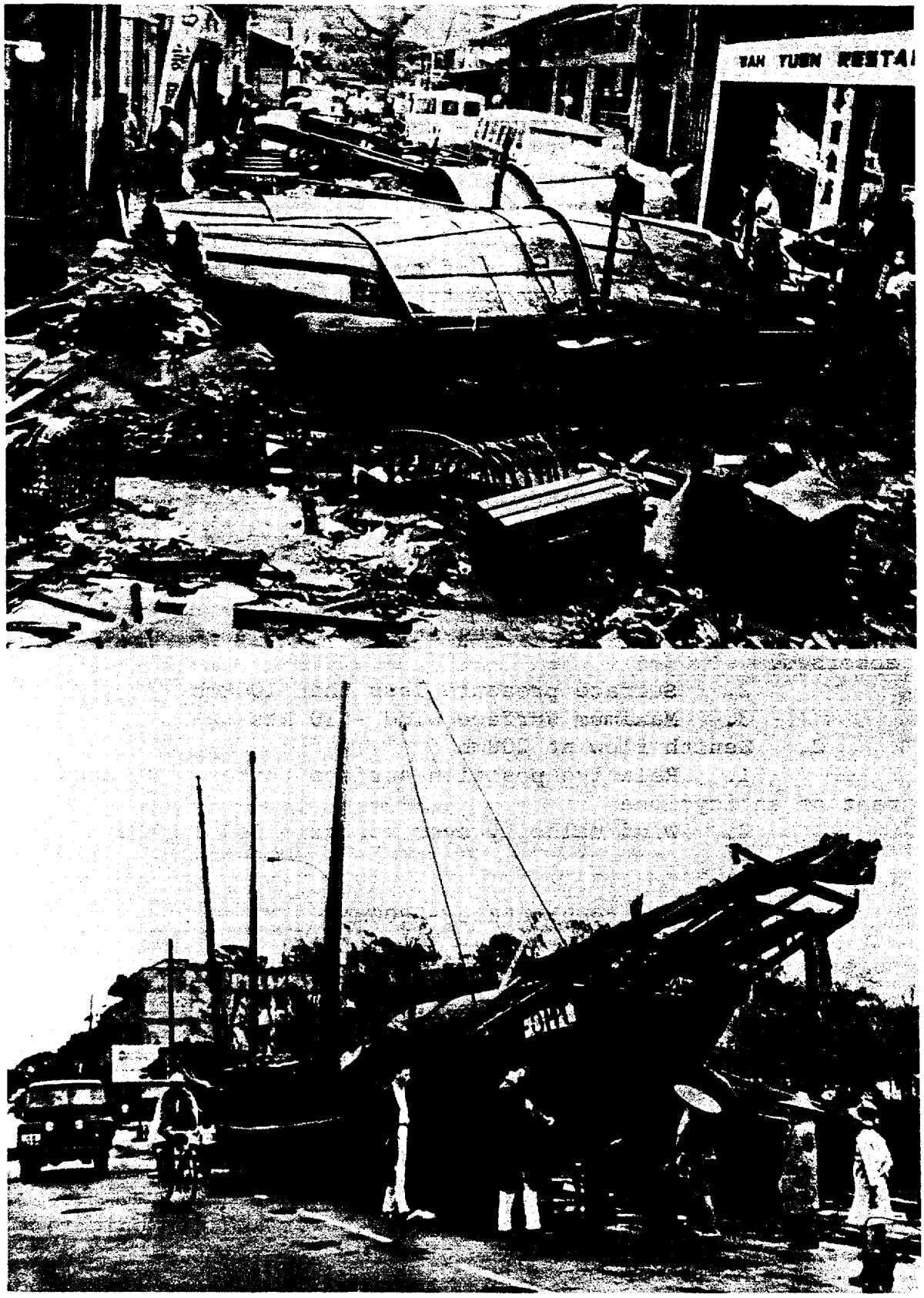
TYPHOON WANDA 27 AUG-01 SEP 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
271200Z	14.7N	135.6E	------	------
271800Z	15.4N	134.2E	------	------
280000Z	16.0N	132.9E	------	------
280600Z	16.4N	131.7E	------	------
281200Z	16.8N	130.6E	------	------
281800Z	17.2N	129.7E	------	------
290000Z	17.6N	128.8E	------	------
290600Z	18.1N	127.9E	344-140	------
291200Z	18.8N	126.7E	347-162	------
291800Z	19.1N	125.3E	355-196	------
300000Z	19.3N	123.9E	078-155	------
300600Z	19.6N	122.6E	061-132	014-252
301200Z	20.0N	121.2E	037-172	012-292
301800Z	20.4N	120.0E	056-167	013-305
310000Z	20.4N	118.7E	050-232	055-305
310600Z	20.6N	117.4E	250-99	045-270
311200Z	21.2N	116.4E	242-118	031-230
311800Z	21.7N	115.5E	230-102	049-237
010000Z	22.2N	114.4E	255-110	050-236
010600Z	22.3N	113.6E	261-133	086-104
011200Z	22.7N	112.8E	254-104	289-115
011800Z	23.0N	112.0E	270-87	304-96

AVERAGE 24 HOUR ERROR 140.6 MI
AVERAGE 48 HOUR ERROR 222.0 MI


TYPHOON WANDA
27 AUGUST-01 SEPTEMBER 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
01/18Z
01/00Z
31/00Z
30/00Z
29/00Z
28/00Z
27/12Z
SHANGHAI
OKINAWA
HONG KONG
MANILA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
110°
120°
130°
140°
150°
30°
20°
10°

TYPHOON WANDA GUTTED TENEMENTS IN HONG KONG (TOP) AND LEFT CHILDREN ONLY MAKE-SHIFT DEBRIS OF A DAMAGED HOUSE (BOTTOM). (AP PHOTO)



THE HIGH TIDES AND SAVAGE WINDS OF TYPHOON WANDA DEPOSITED SAMPANS (TOP) AND JUNKS (BOTTOM) ON HONG KONG STREETS. (AP PHOTO)

TYPHOON AMY - 290600Z AUGUST - 080000Z SEPTEMBER 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 9 3/4

2. Calendar days of typhoon intensity - 6¼

3. Total distance traveled during tropical warning period - 2964 MI

B. Characteristics as a typhoon

1. Min observed SLP - 935mb, 030420Z

2. Min observed 850mb height - 2730 ft, 021200Z

3. Min observed 700mb height - 8210 ft, 030420Z

4. Max vertical development - 40,000 ft, 041800Z

II. DEVELOPMENT

A. Initial impetus - Surge from westerlies into MPT and then into the easterlies.

B. Initial surface vortex

1. Embedded vortex at 270600Z, junction vortex absorbed.

2. Surface pressure less than 1008mb

3. Maximum surface wind - 10 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - NE quadrant of anticyclone

2. Wind velocity over vortex - 340/14 kts

III. STEERING

A. Prior to recurvature - 300mb

B. During recurvature - 500mb

C. After recurvature - 500mb

IV. DISSIPATION

A. Causative factor - Cold air

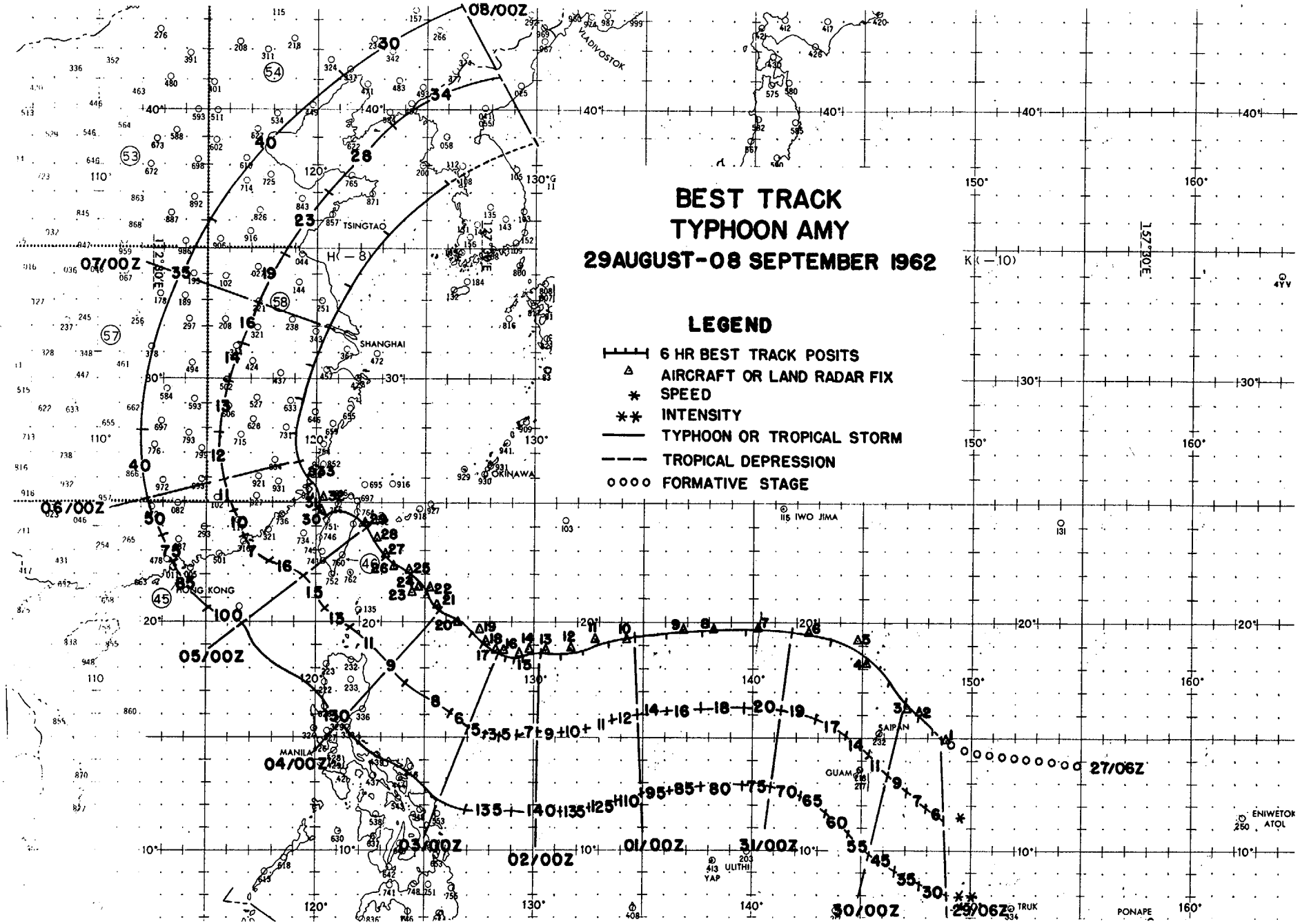
B. Final disposition - Extratropical

V. DAMAGE

A. Total lives lost - 24

B. Total monetary value - Millions of dollars

C. Types of property - Crops, power and communication lines, and buildings


BEST TRACK
TYPHOON AMY
29AUGUST-08 SEPTEMBER 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
08/00Z
07/00Z
06/00Z
05/00Z
04/00Z
03/00Z
02/00Z
01/00Z
31/00Z
30/00Z
29/06Z
27/06Z
VLADIVOSTOK
TSINGTAO
SHANGHAI
OKINAWA
HONG KONG
MANILA
IWO JIMA
SAIPAN
GUAM
YAP
ULITHI
TRUK
PONAPE
ENIWETOK ATOL
157°30'E

LAND RADAR AND AIRCRAFT FIXES - TYPHOON AMY

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	290440Z	14.9N	148.8E	VW1-P-10	30	-	-	1000	- -	POORLY DEFINED 15X30 MI
2	292140Z	16.2N	147.6E	54-P-05	55	55	-	992	15/13	CIRC 12 MI DIA,OPEN SE TO W
3	300200Z	16.3N	147.0E	54-P-01	55	60	9910	984	15/13	CIRC 12 MI DIA,OPEN S TO NW
4	301000Z	18.3N	145.2E	VW1-P-20	-	-	-	985	- -	RDR PRESENTATION POOR
5	301533Z	19.2N	144.8E	VW1-P-03	-	-	9720	-	12/11	CIRC 25 MI DIA,OPEN SW
6	302150Z	19.6N	142.5E	54-P-04	70	65	9630	979	12/07	CIRC 40 MI DIA,OPEN S
7	310350Z	19.7N	140.3E	54-P-03	70	65	9590	978	12/09	CIRC 35 MI DIA,OPEN SW
8	311000Z	19.7N	138.2E	VW1-R-05	-	-	-	-	- -	DIA 21 MI,OPEN S
9	311530Z	19.6N	136.8E	VW1-R-05	-	-	-	-	- -	66 MI E-W & 54 MI N-S
10	010400Z	19.3N	134.1E	54-P-02	130	120	8480	938	11/11	CIRC 20 MI DIA
11	010916Z	19.2N	132.9E	VW1-R-03	-	-	-	-	- -	CIRC 32 MI DIA
12	011536Z	18.8N	131.6E	VW1-R-05	-	-	-	-	- -	CIRC 25 MI DIA
13	012200Z	18.7N	130.5E	54-P-02	-	120	8500	978	20/13	CIRC 20 MI DIA
14	020345Z	18.8N	129.8E	54-P-02	125	-	8420	973	18/17	---
15	020945Z	18.6N	129.4E	VW1-R-03	-	-	-	-	- -	CIRC 46 MI DIA,OPEN N
16	021530Z	18.6N	128.7E	VW1-R-05	-	-	-	-	- -	DIA 45 MI,OPEN NW
17	022225Z	18.8N	128.4E	54-P-03	130	110	8230	936	19/14	DIA 18 MI,POORLY DEF

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

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
18	030420Z	19.1N	127.9E	54-P-05	120	110	8210	935	17/13	CIRC 19 MI DIA
19	031017Z	19.6N	127.5E	VW1-R-05	-	-	-	-	- -	CONCENTRIC INNER DIA 8 MI,OUTER DIA 28 MI
20	031600Z	20.0N	126.5E	VW1-R-03	-	-	-	-	- -	CIRC 16 MI DIA
21	032150Z	20.6N	125.5E	54-P-03	70	80	8360	941	17/16	CIRC 21 MI DIA,OPEN S
22	040230Z	21.5N	125.1E	USAF-R-U	-	-	-	-	- -	---
23	040630Z	21.2N	124.4E	LND/RDR	-	-	-	-	- -	---
24	041000Z	21.4N	124.7E	VW1-R-01	-	-	-	-	- -	CIRC 19 MI DIA
25	041300Z	22.1N	124.2E	LND/RDR	-	-	-	-	- -	---
26	041600Z	22.4N	123.5E	LND/RDR	-	-	-	-	- -	---
27	041900Z	22.9N	123.1E	LND/RDR	-	-	-	-	- -	---
28	042200Z	23.5N	122.8E	LND/RDR	-	-	-	-	- -	DIA 40 MI
29	050200Z	24.1N	122.2E	LND/RDR	-	-	-	-	- -	---
30	050900Z	24.6N	120.3E	LND/RDR	-	-	-	-	- -	---
31	051100Z	24.7N	120.2E	LND/RDR	-	-	-	-	- -	---
32	051500Z	25.3N	120.3E	LND/RDR	-	-	-	-	- -	---
33	051800Z	26.2N	119.8E	LND/RDR	-	-	-	-	- -	---

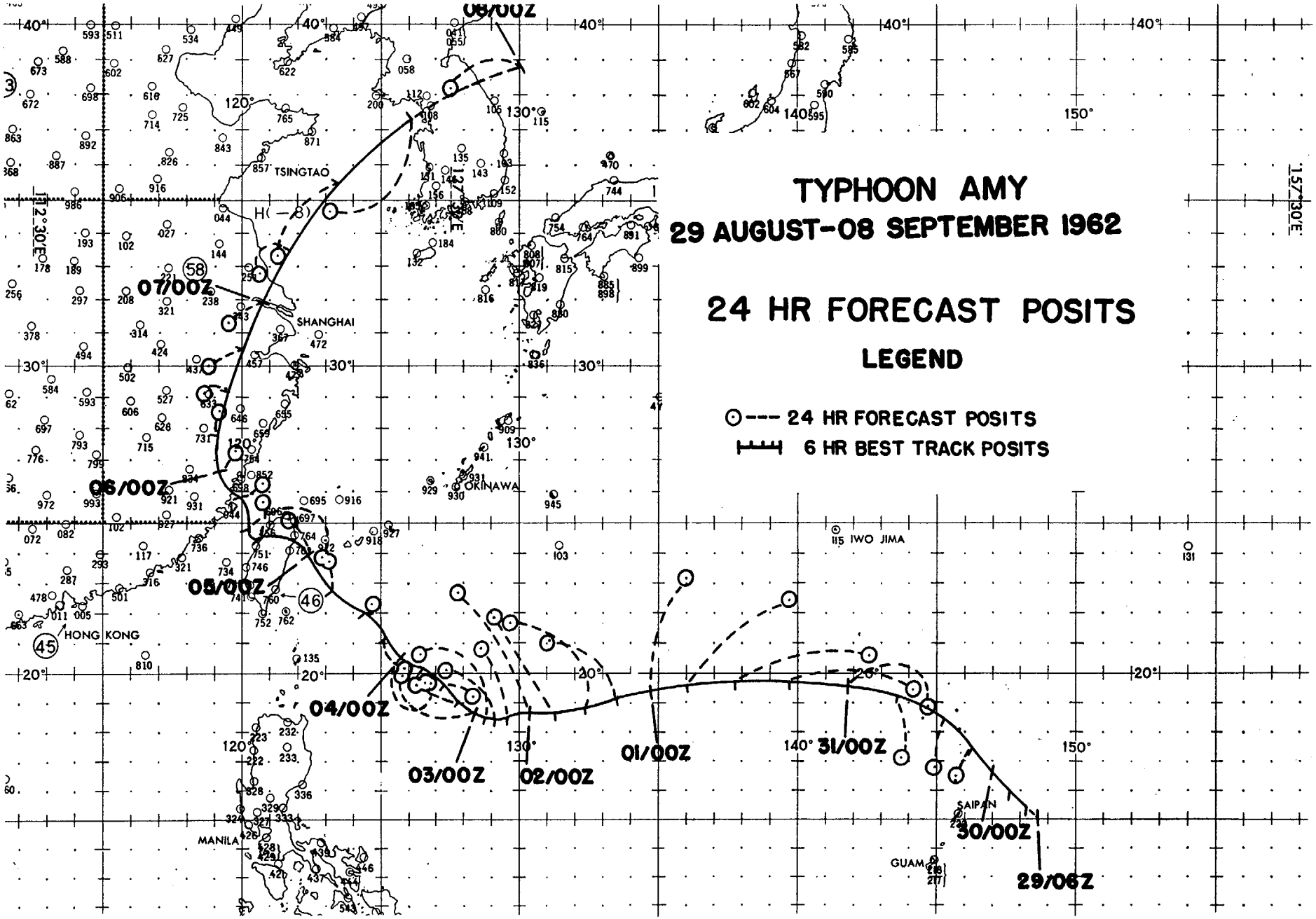
TYPHOON AMY 29 AUG-08 SEP 1962
POSITION AND FORECAST VERIFICATION DATA

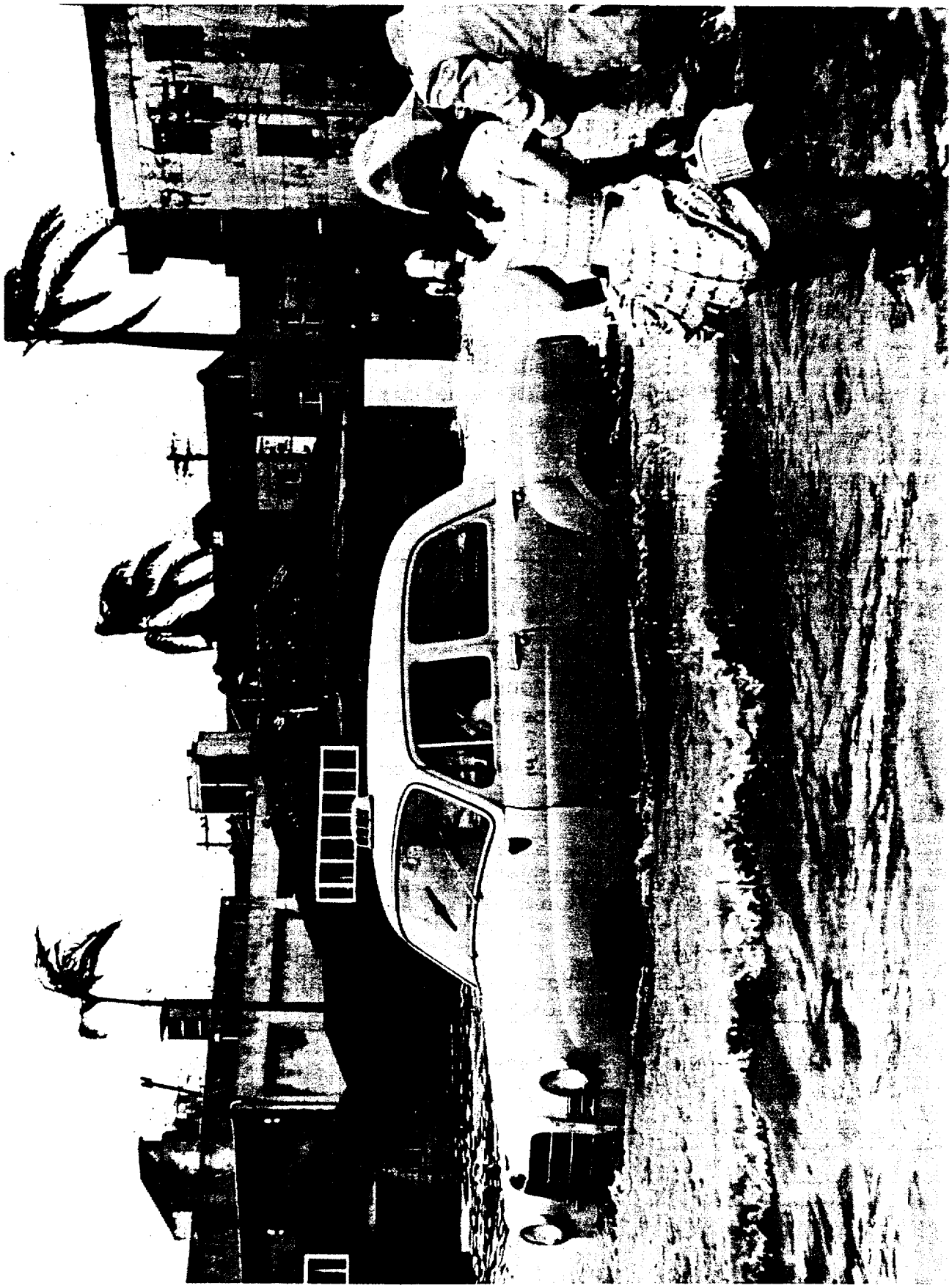
DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
290600Z	15.0N	148.7E	------	------
291200Z	15.4N	148.2E	------	------
291800Z	16.0N	147.7E	------	------
300000Z	16.7N	147.0E	------	------
300600Z	17.5N	146.2E	------	------
301200Z	18.4N	145.2E	------	------
301800Z	19.3N	143.6E	------	------
310000Z	19.7N	141.7E	105-180	------
310600Z	19.7N	139.6E	094-252	------
311200Z	19.6N	137.7E	078-283	------
311800Z	19.5N	136.0E	052-276	------
010000Z	19.4N	134.6E	020-240	072-396
010600Z	19.2N	133.3E	315-171	069-432
011200Z	18.9N	132.2E	321-222	052-420
011800Z	18.7N	131.1E	331-227	024-441
020000Z	18.7N	130.3E	330-283	008-392
020600Z	18.6N	129.6E	340-136	334-334
021200Z	18.6N	129.1E	314-132	334-464
021800Z	18.6N	128.8E	313-182	336-455
030000Z	18.8N	128.3E	294-147	338-550
030600Z	19.3N	127.8E	291-65	335-276
031200Z	19.8N	127.2E	116-82	315-242
031800Z	20.1N	126.3E	189-27	318-257
040000Z	20.4N	125.6E	122-82	297-181
040600Z	21.2N	125.1E	139-78	275-104
041200Z	22.0N	124.3E	066-29	118-143
041800Z	22.8N	123.2E	360-52	153-71
050000Z	24.0N	122.3E	335-73	147-188
050600Z	24.5N	120.6E	002-70	133-202
051200Z	24.9N	120.2E	112-153	078-88
051800Z	25.9N	119.9E	063-48	330-25

TYPHOON AMY 29 AUG-08 SEP 1962
POSITION AND FORECAST VERIFICATION DATA (CONT'D)

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
060000Z	26.7N	119.1E	044-54	328-70
060600Z	27.9N	119.2E	360-38	288-70
061200Z	29.1N	119.6E	274-48	166-125
061800Z	30.5N	120.0E	246-73	215-74
070000Z	32.0N	120.7E	237-66	225-132
070600Z	33.7N	121.6E	------	305-20
071200Z	35.5N	123.3E	------	214-127
071800Z	37.3N	126.0E	222-206	224-202
080000Z	38.9N	130.0E	253-120	233-317

AVERAGE 24 HOUR ERROR 132.1 MI
AVERAGE 48 HOUR ERROR 234.4 MI


TYPHOON AMY
29 AUGUST-08 SEPTEMBER 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
08/00Z
07/00Z
06/00Z
05/00Z
04/00Z
03/00Z
02/00Z
01/00Z
31/00Z
30/00Z
29/06Z
TSINGTAO
SHANGHAI
OKINAWA
IWO JIMA
HONG KONG
MANILA
SAIPAN
GUAM
112°30'E
127°E
157°30'E



GONDOLA, ANYONE... A TOUCH OF OLD VENICE COMES TO TAIPEI, TAIWAN IN THE WAKE OF TYPHOON AMY. (STARS & STRIPES PHOTO)

TYPHOON CARLA - 190000Z-230000Z SEPTEMBER 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 4
2. Calendar days of typhoon intensity - ¼
3. Total distance traveled during tropical warning period - 858 MI

B. Characteristics as a typhoon

1. Min observed SLP - 983mb, 210630Z
2. Min observed 850mb height - 4400 ft, 210630Z
3. Min observed 700mb height - 9650 ft, 210630Z
4. Max vertical development - 30,000 ft, 211200Z

II. DEVELOPMENT

A. Initial impetus - Surge from westerlies into MPT followed by cut-off low, and then CARLA formed downstream.

B. Initial surface vortex

1. Embedded in ITC at 140000Z
2. Surface pressure less than 1009mb
3. Maximum surface wind - 10 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone
2. Wind velocity over vortex - 060/10 kts

III. STEERING

A. Prior to recurvature - 500mb

B. During recurvature - NA

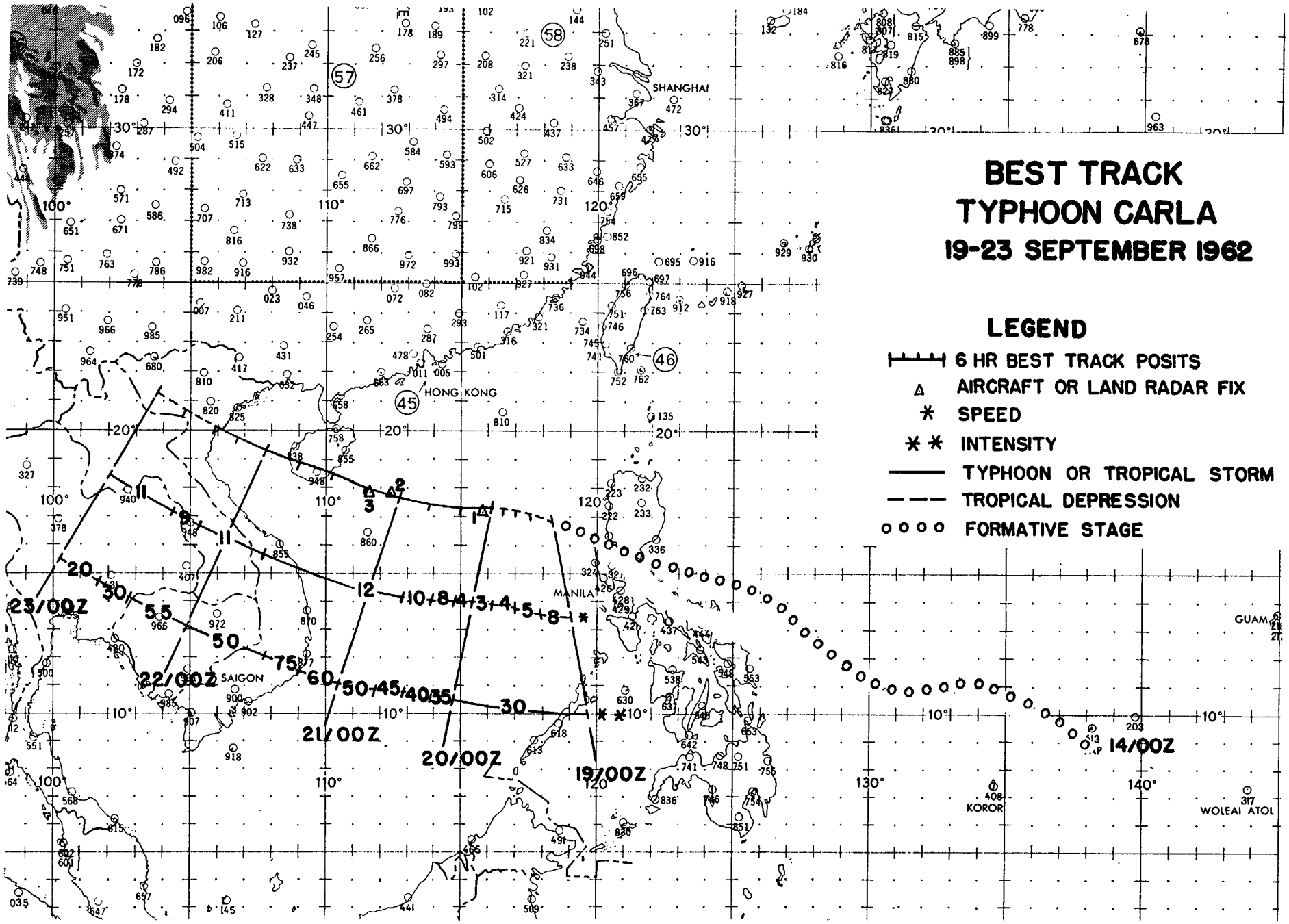
C. After recurvature - NA

IV. DISSIPATION

A. Causative factor - Land strike and cold air

B. Final disposition - Dissipated over land

V. DAMAGE - No reports received


BEST TRACK
TYPHOON CARLA
19-23 SEPTEMBER 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
SHANGHAI
HONG KONG
MANILA
SAIGON
GUAM
KOROR
WOLEAI ATOL
23/00Z
22/00Z
21/00Z
20/00Z
19/00Z
14/00Z

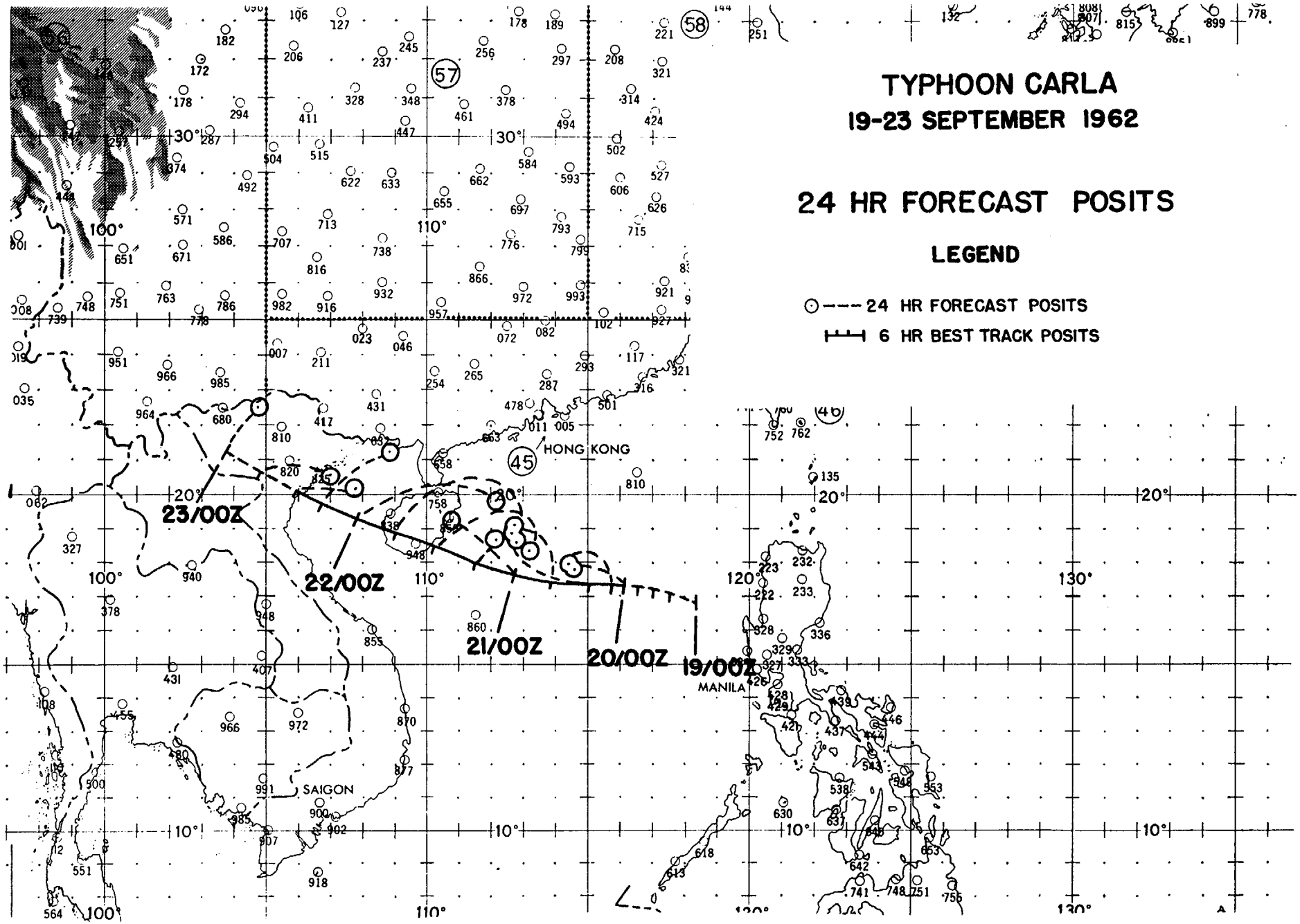
LAND RADAR AND AIRCRAFT FIXES - TYPHOON CARLA

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	200628Z	17.2N	115.8E	54-P-02	35	43	10100	1003	12/12	CIRC
2	210200Z	17.8N	112.3E	54-P-05	45	45	9790	990	15/14	CIRC 10 MI DIA, OPEN N & W
3	210630Z	17.9N	111.6E	54-P-04	70	75	9650	983	15/15	CIRC 12 MI DIA

TYPHOON CARLA 19-23 SEP 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
190000Z	16.8N	118.3E	------	------
190600Z	17.1N	117.5E	------	------
191200Z	17.2N	117.0E	------	------
191800Z	17.2N	116.5E	------	------
200000Z	17.2N	116.3E	------	------
200600Z	17.3N	115.8E	------	------
201200Z	17.3N	115.0E	------	------
201800Z	17.5N	113.9E	------	------
210000Z	17.7N	112.7E	------	------
210600Z	18.0N	111.4E	------	------
211200Z	18.5N	110.2E	094-167	------
211800Z	18.9N	109.0E	084-216	------
220000Z	19.3N	107.9E	083-242	------
220600Z	19.8N	106.8E	055-136	------
221200Z	20.2N	106.0E	093-100	079-224
221800Z	20.7N	104.9E	095-113	071-310
230000Z	21.3N	103.9E	035-92	078-357

AVERAGE 24 HOUR ERROR 152.3 MI
AVERAGE 48 HOUR ERROR 297 MI


TYPHOON CARLA
19-23 SEPTEMBER 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
HONG KONG
MANILA
SAIGON
23/00Z
22/00Z
21/00Z
20/00Z
19/00Z
30°
20°
10°
100°
110°
120°
130°

TYPHOON DINAH - 250600Z SEPTEMBER-040600Z OCTOBER 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 9

2. Calendar days of typhoon intensity - 3½

3. Total distance traveled during tropical warning period - 1860 MI

B. Characteristics as a typhoon

1. Min observed SLP - 953mb, 012221Z

2. Min observed 850mb height - 3580 ft, 012221Z

3. Min observed 700mb height - 8880 ft, 012221Z

4. Max vertical development - 35,000 ft, 021200Z

II. DEVELOPMENT

A. Initial impetus - Surge from westerlies into MPT followed by cut-off low, and then DINAH developed downstream.

B. Initial surface vortex

1. Junction vortex at 241800Z

2. Surface pressure less than 1008mb

3. Maximum surface wind - 10 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SW quadrant of anticyclone

2. Wind velocity over vortex - 140/13 kts

III. STEERING

A. Prior to recurvature - 500mb

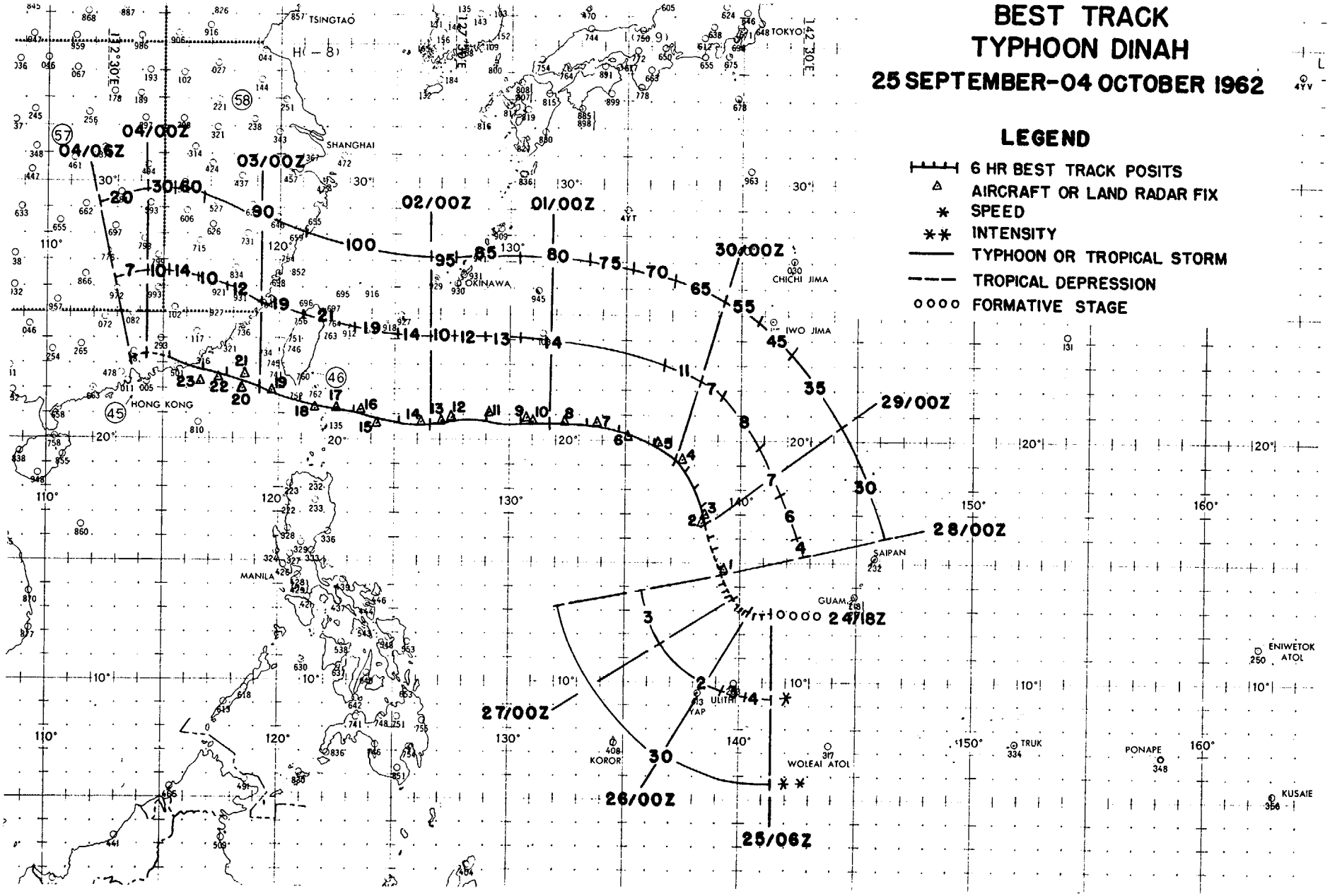
B. During and after recurvature - NA

IV. DISSIPATION

A. Causative factor - Land strike and cold air

B. Final disposition - Dissipated

V. DAMAGE - No reports received


BEST TRACK
TYPHOON DINAH
25 SEPTEMBER-04 OCTOBER 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
TSINGTAO
SHANGHAI
OKINAWA
TOKYO
CHICHI JIMA
IWO JIMA
HONG KONG
MANILA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETOK ATOL
KUSAIE
04/06Z
04/00Z
03/00Z
02/00Z
01/00Z
30/00Z
29/00Z
28/00Z
27/00Z
26/00Z
25/06Z
24/18Z

LAND RADAR AND AIRCRAFT FIXES - TYPHOON DINAH

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	280300Z	14.7N	139.2E	VW1-P-10	25	-	9800	1003	12/-	60 MI E-W & 130 MI N-S
2	290020Z	16.6N	138.4E	VW1-P-U	30	-	-	997	- -	---
3	290320Z	17.0N	138.4E	VW1-P-U	30	-	-	994	- -	LARGE & POORLY DEFINED
4	292230Z	19.2N	137.3E	54-P-02	45	60	9850	988	15/14	DIA 15 MI
5	300345Z	19.9N	136.3E	54-P-03	60	90	9740	984	16/13	DIA 12 MI
6	301000Z	20.2N	135.1E	VW1-R-05	-	-	-	-	- -	OVAL NE-SW
7	301530Z	20.6N	133.8E	VW1-R-10	-	-	-	-	- -	CIRC 75 MI DIA
8	302205Z	20.6N	132.3E	54-P-07	85	60	9540	976	14/04	CIRC 100 MI DIA
9	010309Z	20.8N	130.6E	54-P-02	70	70	9380	966	17/10	CIRC
10	010330Z	20.7N	131.0E	54-P-U	-	-	-	969	16/-	WELL DEFINED
11	011000Z	21.0N	129.0E	VW1-R-05	-	-	-	-	- -	CIRC 50 MI DIA
12	011550Z	20.9N	127.5E	VW1-R-05	-	-	-	-	- -	CIRC 45 MI DIA
13	012200Z	20.7N	127.0E	54-P-U	-	-	-	-	- -	---
14	012221Z	20.7N	126.1E	54-P-03	90	82	8880	953	21/12	CIRC 40 MI DIA
15	020601Z	20.6N	124.2E	315-P-02	85	-	-	-	- -	ELLIP E-W
16	021012Z	21.1N	123.5E	VW1-R-05	-	-	-	-	- -	OVAL 54 MI E-W & 42 MI N-S
17	021300Z	21.2N	122.5E	LND/RDR	-	-	-	-	- -	---
18	021625Z	21.3N	121.6E	LND/RDR	-	-	-	-	- -	---
19	022200Z	21.9N	119.7E	LND/RDR	-	-	-	-	- -	---

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

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
20	030200Z	22.0N	118.4E	LND/RDR	-	-	-	-	- -	---
21	030340Z	22.6N	118.5E	315-P-U	90	-	9050	-	20/-	DIA 35 MI
22	030800Z	22.5N	117.3E	LND/RDR	-	-	-	-	- -	---
23	031155Z	22.3N	116.6E	VW1-R-05	-	-	-	-	- -	CIRC,OPEN NE SEMICIRC

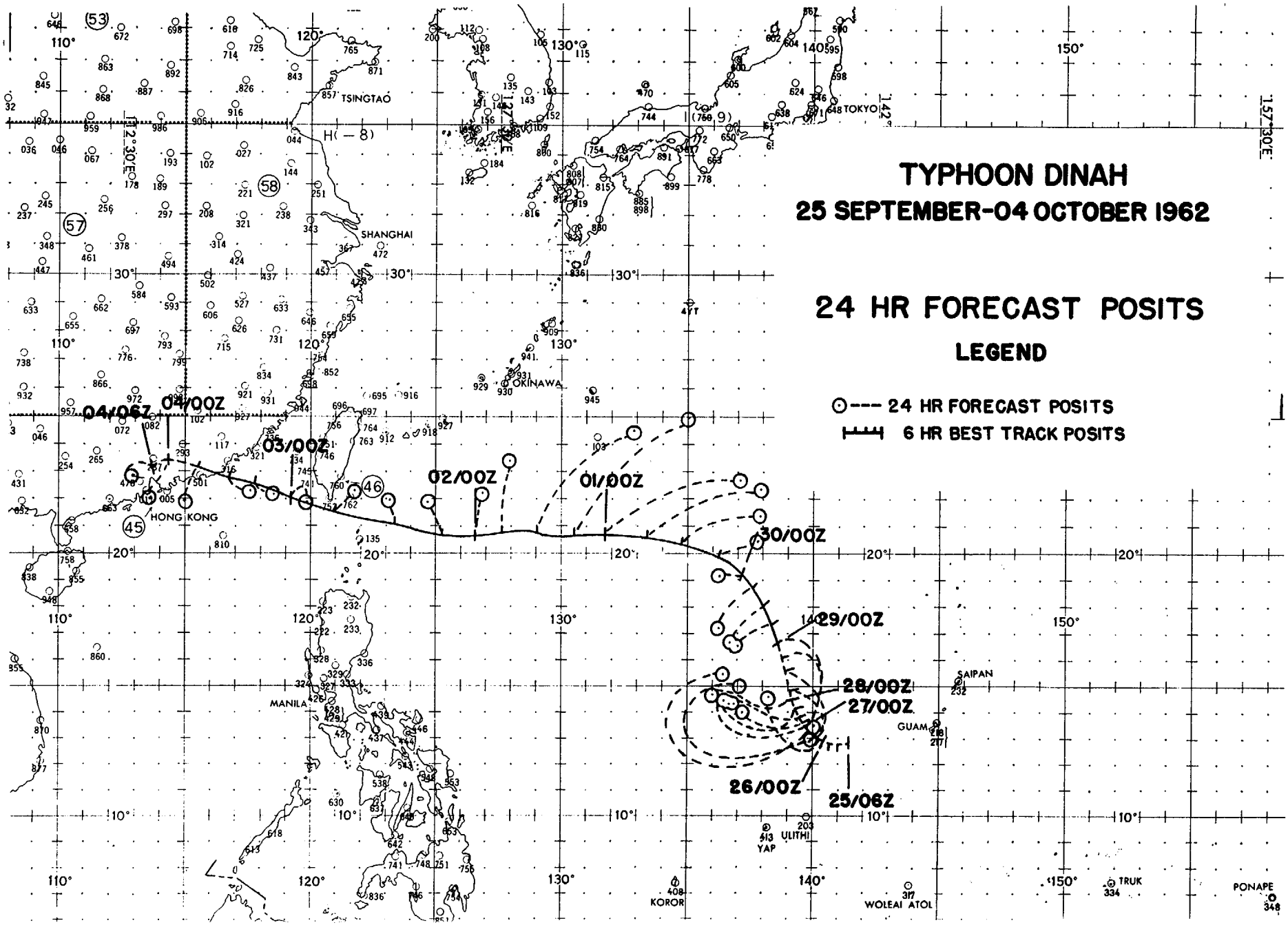
TYPHOON DINAH 25 SEP-04 OCT 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
250600Z	12.8N	141.4E	------	------
251200Z	12.8N	141.0E	------	------
251800Z	12.9N	140.7E	------	------
260000Z	13.0N	140.5E	------	------
260600Z	13.1N	140.3E	------	------
261200Z	13.2N	140.2E	------	------
261800Z	13.3N	140.0E	------	------
270000Z	13.4N	139.8E	------	------
270600Z	13.7N	139.6E	------	------
271200Z	13.9N	139.5E	------	------
271800Z	14.2N	139.4E	------	------
280000Z	14.5N	139.2E	------	------
280600Z	14.8N	139.1E	------	------
281200Z	15.4N	138.9E	------	------
281800Z	16.0N	138.7E	------	------
290000Z	16.6N	138.5E	------	------
290600Z	17.3N	138.3E	------	------
291200Z	18.0N	138.0E	------	------
291800Z	18.7N	137.6E	------	------
300000Z	19.3N	137.2E	258-59	------
300600Z	19.9N	136.2E	071-100	------
301200Z	20.3N	134.8E	073-183	------
301800Z	20.6N	133.3E	068-275	------
010000Z	20.7N	131.8E	068-309	051-165
010600Z	20.7N	130.4E	047-360	062-465
011200Z	20.8N	129.0E	038-285	062-545
011800Z	20.7N	127.7E	005-150	060-635
020000Z	20.6N	126.6E	360-90	058-645
020600Z	20.6N	125.2E	339-80	048-767
021200Z	21.1N	123.2E	355-55	052-750
021800Z	21.4N	121.0E	039-64	019-248

TYPHOON DINAH 25 SEP-04 OCT 1962 (CONT'D)
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
030000Z	22.1N	119.1E	105-46	069-208
030600Z	22.5N	117.9E	115-41	081-112
031200Z	22.8N	116.9E	125-54	093-87
031800Z	23.2N	115.4E	199-85	094-90
040000Z	23.3N	114.3E	212-88	195-36
040600Z	23.1N	113.6E	255-37	250-51

AVERAGE 24 HOUR ERROR 131.2 MI
AVERAGE 48 HOUR ERROR 343.1 MI


TYPHOON DINAH
25 SEPTEMBER-04 OCTOBER 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
TSINGTAO
SHANGHAI
OKINAWA
TOKYO
HONG KONG
MANILA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
04/06Z
04/00Z
03/00Z
02/00Z
01/00Z
30/00Z
29/00Z
28/00Z
27/00Z
26/00Z
25/06Z

TYPHOON EMMA - 011800Z-111200Z OCTOBER 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 9 3/4

2. Calendar days of typhoon intensity - 9½

3. Total distance traveled during tropical warning period - 2232 MI

B. Characteristics as a typhoon

1. Min observed SLP - 903mb, 042130Z

2. Min observed 850mb height - 1925 ft, 050000Z

3. Min observed 700mb height - 7070 ft, 050315Z

4. Max vertical development - 40,000 ft, 051200Z

II. DEVELOPMENT

A. Initial impetus - Surge from westerlies into easterlies.

B. Initial surface vortex

1. Embedded in ITC at 301800Z

2. Surface pressure less than 1003mb

3. Maximum surface wind - 15 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone

2. Wind velocity over vortex - 040/30 kts

III. STEERING

A. Prior to recurvature - 300mb

B. During recurvature - 300mb

C. After recurvature - 300mb

IV. DISSIPATION

A. Causative factor - Cold air

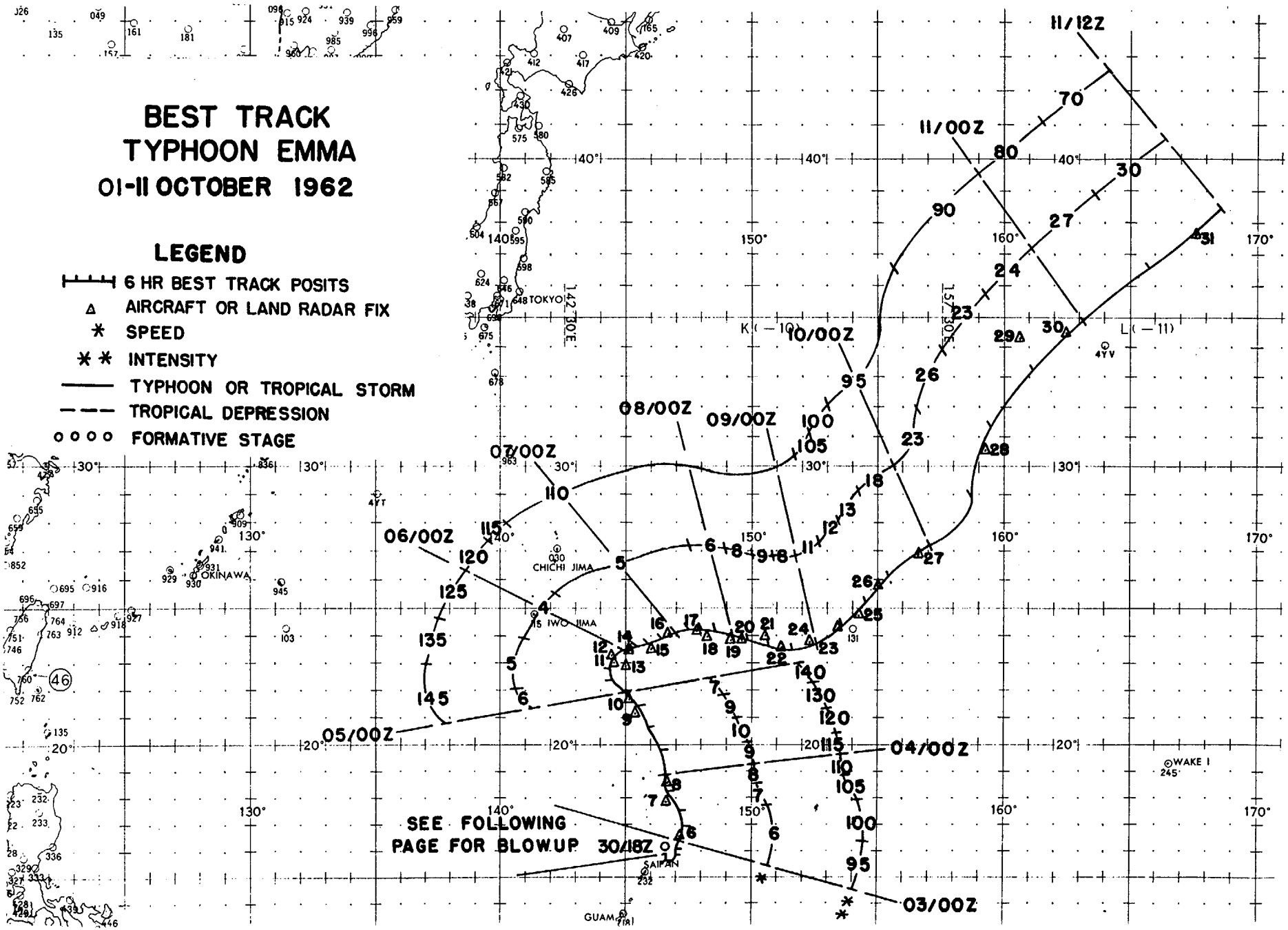
B. Final disposition - Extratropical

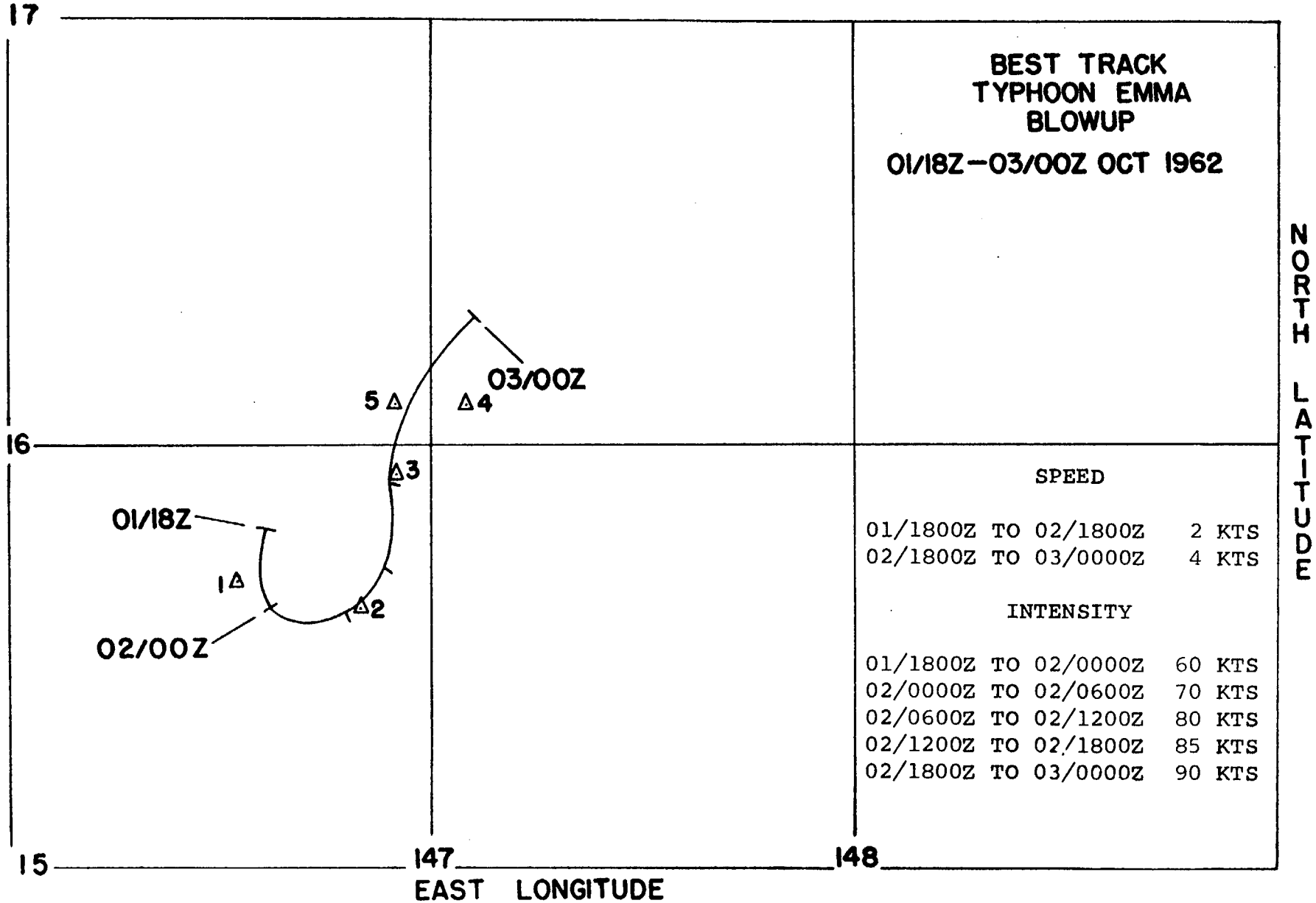
V. DAMAGE

A. Total lives lost - None reported

B. Total monetary value - $250,000

C. Types of property - Buildings, communications equipment, and fishing boats


BEST TRACK
TYPHOON EMMA
01-11 OCTOBER 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
SEE FOLLOWING PAGE FOR BLOWUP
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
WAKE I
05/00Z
06/00Z
07/00Z
08/00Z
09/00Z
10/00Z
11/00Z
11/12Z
04/00Z
03/00Z
30/18Z


BEST TRACK
TYPHOON EMMA
BLOWUP
01/18Z–03/00Z OCT 1962
17
16
15
147
148
EAST LONGITUDE
NORTH LATITUDE
01/18Z
02/00Z
03/00Z
1
2
3
4
5
SPEED
01/1800Z TO 02/1800Z 2 KTS
02/1800Z TO 03/0000Z 4 KTS
INTENSITY
01/1800Z TO 02/0000Z 60 KTS
02/0000Z TO 02/0600Z 70 KTS
02/0600Z TO 02/1200Z 80 KTS
02/1200Z TO 02/1800Z 85 KTS
02/1800Z TO 03/0000Z 90 KTS

LAND RADAR AND AIRCRAFT FIXES - TYPHOON EMMA

FIX NO.	TIME	LAT.	LONG	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	020325Z	15.7N	146.5E	LND/RDR	-	-	-	-	- -	---
2	020615Z	15.6N	146.8E	54-P-01	75	-	9650	984	15/11	ELLIP 40 MI E-W & 20 MI N-S
3	021745Z	15.9N	146.9E	VW1-R-U	-	-	-	-	- -	DIA 20 MI,OPEN E
4	021849Z	16.1N	147.1E	54-P-03	-	45	9370	968	14/-	CIRC 10 MI DIA,OPEN NE
5	022145Z	16.1N	146.9E	54-P-03	50	70	9330	966	18/-	OVAL NE-SW 30X15 MI
6	030300Z	16.6N	147.2E	54-P-05	60	60	9150	962	17/16	OVAL NE-SW 30X15 MI
7	031550Z	17.9N	146.7E	VW1-R-03	-	-	-	-	- -	CIRC 7 MI DIA
8	032100Z	18.5N	146.6E	54-P-01	100	90	7980	-	17/15	CIRC 9 MI DIA
9	041600Z	21.1N	145.4E	VW1-R-03	-	-	-	-	- -	CIRC 22 MI DIA
10	042130Z	21.7N	145.1E	54-P-05	135	-	7420	903	25/16	CIRC 15 MI DIA
11	050315Z	23.0N	144.5E	54-P-03	120	120	7070	906	26/17	OVAL 10X6 MI
12	051645Z	23.2N	144.4E	VW1-R-05	-	-	-	-	- -	CIRC 15 MI DIA
13	052230Z	22.8N	145.0E	315-P-05	110	-	7830	-	- -	CIRC 17 MI DIA,OPEN NW
14	060300Z	23.5N	145.1E	54-P-05	110	100	8100	926	17/11	CIRC 30 MI DIA
15	061450Z	23.5N	146.0E	VW1-R-05	-	-	-	-	- -	CIRC 19 MI DIA
16	062145Z	24.0N	146.7E	56-P-07	100	90	8460	942	18/15	DIA 20 MI, POORLY DEF
17	070315Z	24.3N	147.9E	56-P-10	80	70	8430	939	18/17	DIA 20 MI
18	071600Z	23.9N	148.2E	VW1-R-05	-	-	-	-	- -	35 MI N-S & 29 MI E-W

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

FIX NO.	TIME	LAT.	LONG	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
19	072230Z	23.8N	149.1E	315-P-05	100	-	8450	-	18/-	CIRC 24 MI DIA,OPEN E & SE
20	080300Z	23.9N	149.5E	54-P-10	-	80	8420	939	18/16	CIRC 15 MI DIA,OPEN SE & WNW
21	080650Z	24.0N	150.5E	UNK-R-U	-	-	-	-	- -	---
22	081530Z	23.5N	151.2E	VW1-R-03	-	-	-	-	- -	DIA 30 MI,OPEN N
23	082245Z	23.7N	152.3E	54-P-05	75	100	8270	929	19/19	CIRC 25 MI DIA,OPEN N, S&W
24	090345Z	24.3N	153.4E	54-P-02	100	115	8300	931	19/19	CIRC 25 MI DIA,OPEN NW
25	090940Z	24.6N	154.2E	VW1-R-05	-	-	-	-	- -	CIRC 25 MI DIA,OPEN N SEMICIRC
26	091600Z	25.8N	155.0E	VW1-R-05	-	-	-	-	- -	DIA 24 MI,OPEN N&W
27	092145Z	26.9N	156.6E	54-P-03	-	60	8560	945	16/16	CIRC 12 MI DIA
28	101000Z	30.5N	159.2E	VW1-R-U	-	-	-	-	- -	DIA 30 MI,OPEN W
29	101715Z	34.3N	160.6E	SHIP-R-U	-	-	-	-	- -	---
30	102230Z	34.5N	162.5E	54-P-06	60	80	8820	953	12/12	NO EYE
31	110920Z	37.5N	167.5E	VW1-P-30	-	-	-	-	- -	VERY POORLY DEFINED

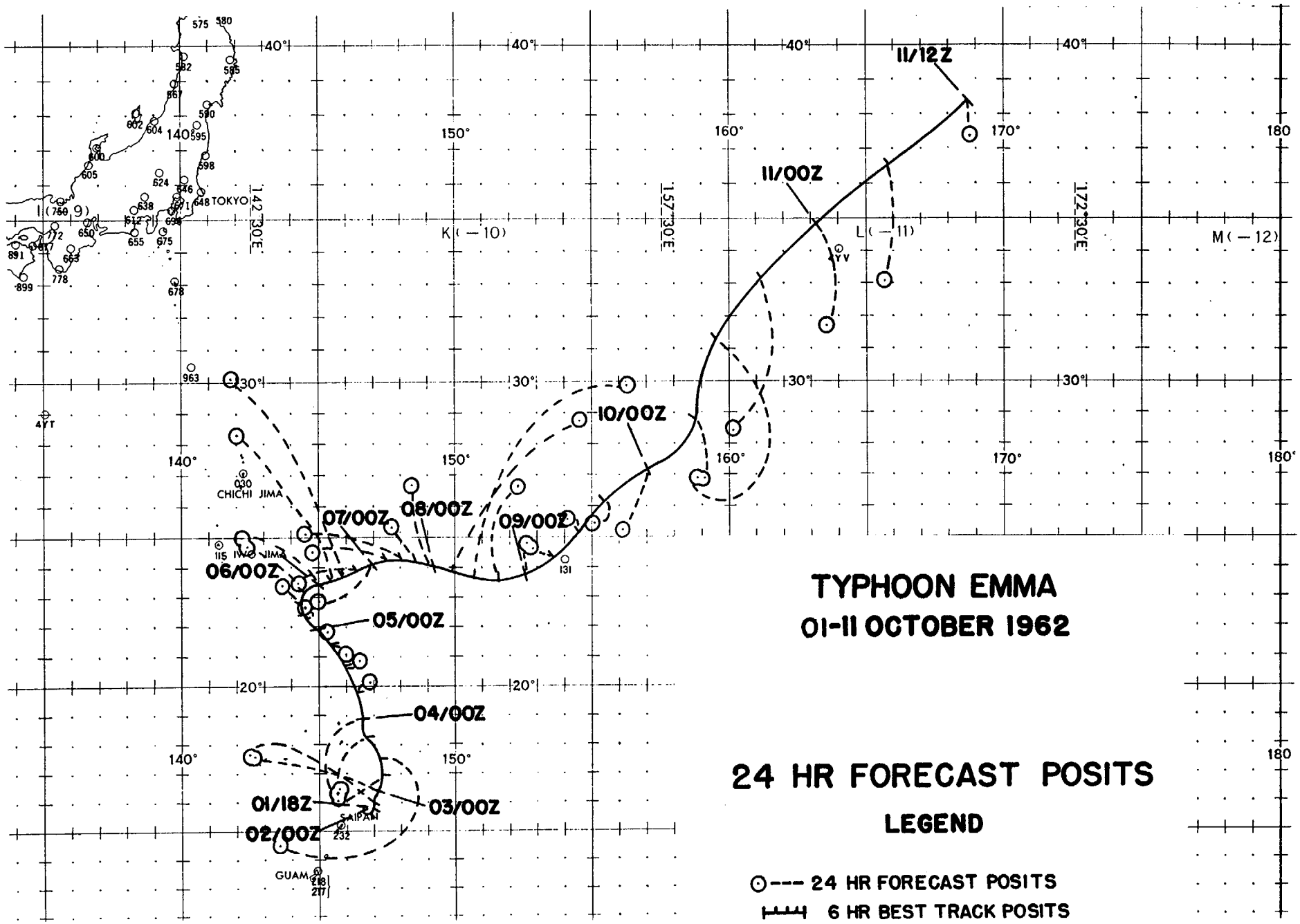
TYPHOON EMMA 01-11 OCT 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
011800Z	15.8N	146.6E	------	------
020000Z	15.6N	146.6E	------	------
020600Z	15.6N	146.8E	------	------
021200Z	15.7N	146.9E	------	------
021800Z	15.9N	146.9E	291-275	------
030000Z	16.3N	147.1E	286-263	------
030600Z	16.9N	147.2E	250-160	------
031200Z	17.5N	147.0E	228-276	------
031800Z	18.2N	146.6E	205-115	277-475
040000Z	18.9N	146.6E	197-175	268-410
040600Z	19.8N	146.3E	042-40	234-243
041200Z	20.7N	145.8E	076-40	218-440
041800Z	21.4N	145.3E	120-45	211-277
050000Z	21.9N	144.9E	116-23	202-325
050600Z	22.4N	144.4E	141-20	360-108
051200Z	22.8N	144.2E	132-35	029-65
051800Z	23.2N	144.5E	307-143	344-65
060000Z	23.4N	144.9E	303-180	328-120
060600Z	23.6N	145.3E	320-330	310-247
061200Z	23.7N	145.8E	331-435	330-285
061800Z	23.9N	146.4E	250-115	310-410
070000Z	24.1N	146.9E	236-124	309-445
070600Z	24.2N	147.4E	279-147	343-590
071200Z	24.2N	148.0E	287-200	349-650
071800Z	24.1N	148.5E	325-85	296-295
080000Z	24.0N	149.2E	343-160	290-278
080600Z	23.8N	149.8E	042-380	309-418
081200Z	23.7N	150.6E	040-470	064-695
081800Z	23.6N	151.6E	010-187	335-290

TYPHOON EMMA 01-11 OCT 1962
POSITION AND FORECAST VERIFICATION DATA (CONT'D)

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
090000Z	23.7N	152.5E	007-64	354-378
090600Z	24.3N	153.5E	296-52	058-765
091200Z	25.1N	154.6E	317-35	041-1120
091800Z	26.2N	155.3E	198-50	018-265
100000Z	27.2N	157.0E	202-130	034-70
100600Z	28.8N	158.8E	176-115	237-163
101200Z	31.4N	159.5E	188-268	200-185
101800Z	33.2N	161.1E	180-280	195-280
110000Z	34.9N	163.1E	178-192	192-423
110600Z	36.5N	165.8E	180-207	180-370
111200Z	38.4N	168.7E	182-63	198-510

AVERAGE 24 HOUR ERROR 163.3 MI
AVERAGE 48 HOUR ERROR 364.4 MI


TYPHOON EMMA
01-11 OCTOBER 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
01/18Z
02/00Z
03/00Z
04/00Z
05/00Z
06/00Z
07/00Z
08/00Z
09/00Z
10/00Z
11/00Z
11/12Z
TOKYO
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
142°30'E
157°30'E
172°30'E
K(−10)
L(−11)
M(−12)

TYPHOON FREDA - 030600Z-100000Z OCTOBER 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 6 3/4
2. Calendar days of typhoon intensity-5 1/4
3. Total distance traveled during tropical warning period - 1380 MI

B. Characteristics as a typhoon

1. Min observed SLP - 948mb, 052100Z
2. Min observed 850mb height - 3435 ft, 052100Z
3. Min observed 700mb height - 8730 ft, 052100Z
4. Max vertical development - 30,000 ft, 051200Z

II. DEVELOPMENT

A. Initial impetus - Outdraft formed in divergent field of the MPT and moved W over the junction of the easterly wave and the ITC.

B. Initial surface vortex

1. Junction vortex at 280000Z
2. Surface pressure less than 1009mb
3. Maximum surface wind - 10 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone
2. Wind velocity over vortex - 010/07 kts

III. STEERING

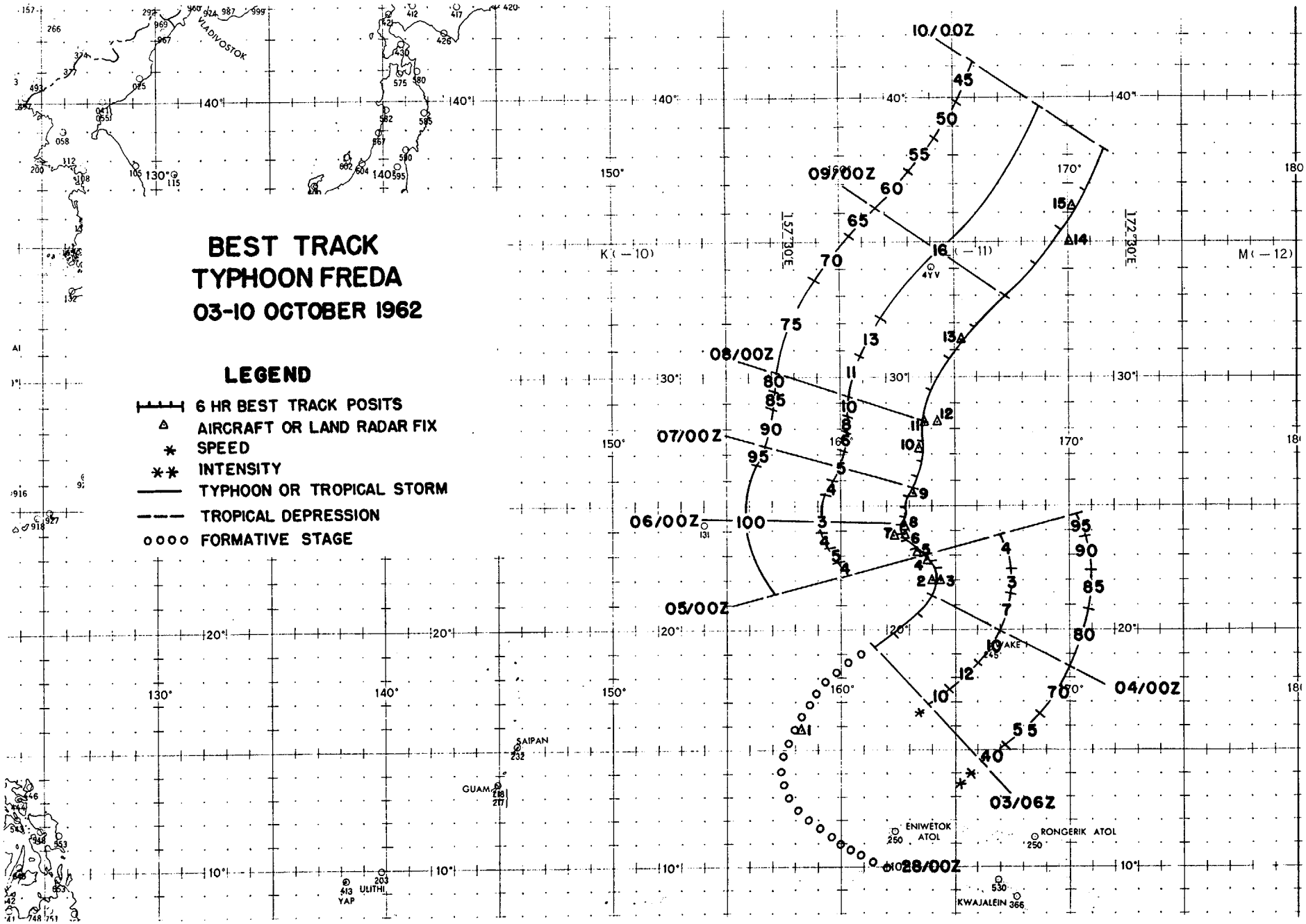
A. Prior to recurvature - 500mb
B. During recurvature - 500mb
C. After recurvature - 500mb

IV. DISSIPATION

A. Causative factor - Cold air
B. Final disposition - Extratropical

V. DAMAGE - No reports received

VI. ADDITIONAL NOTES - FREDA as an extratropical storm hit the West Coast of the United States.


BEST TRACK
TYPHOON FREDA
03-10 OCTOBER 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
VLADIVOSTOK
SAIPAN
GUAM
ULITHI
YAP
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
WAKE
157°30'E
172°30'E
10/00Z
09/00Z
08/00Z
07/00Z
06/00Z
05/00Z
04/00Z
03/06Z
28/00Z

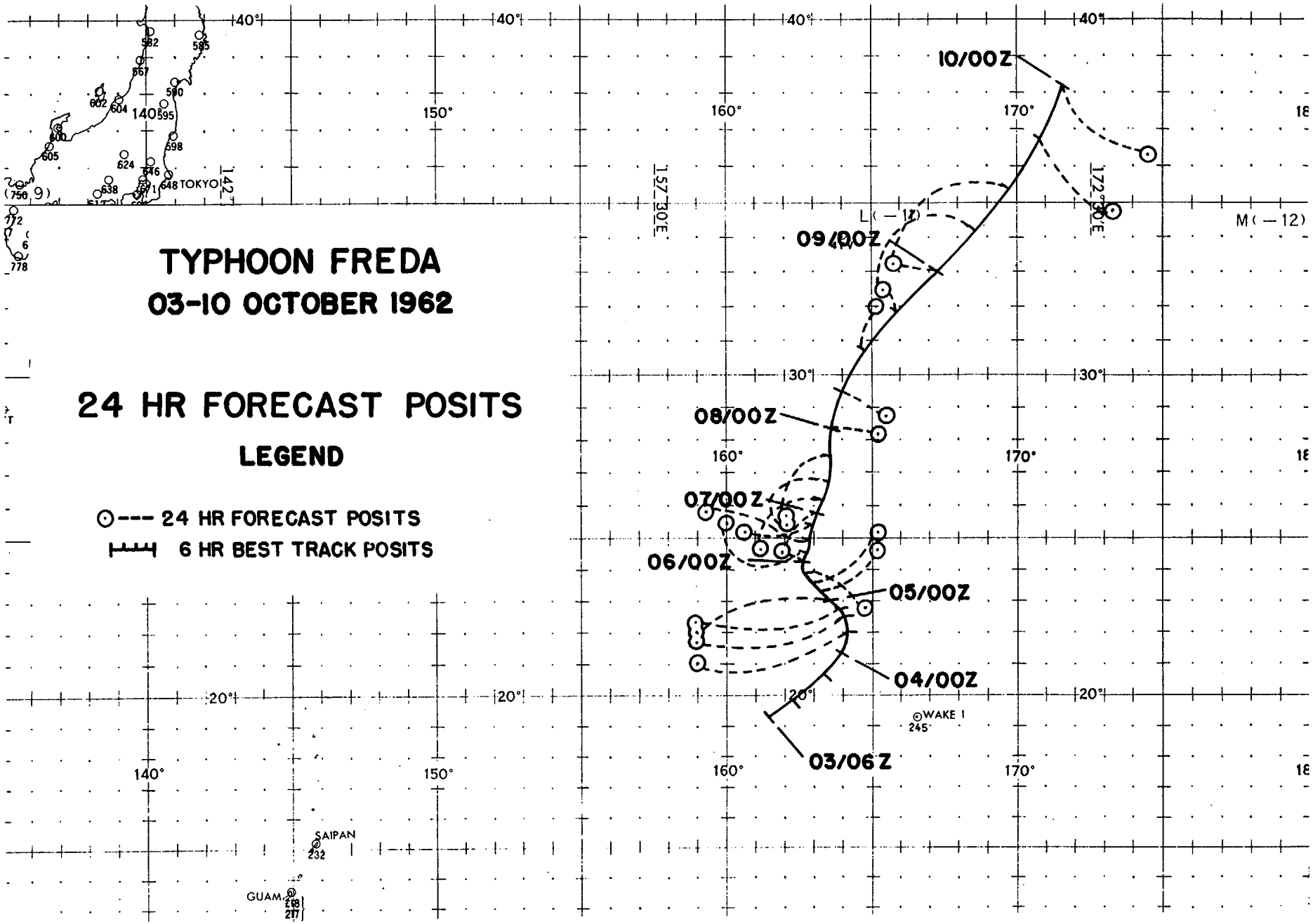
LAND RADAR AND AIRCRAFT FIXES - TYPHOON FREDA

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	010706Z	15.8N	158.2E	54-P-05	15	-	-	1003	- -	NO CLD CENTER
2	040319Z	22.0N	164.0E	54-P-05	80	65	9360	-	17/14	DIA 30 MI,WALL CLDS ALL QUADS
3	041600Z	22.0N	164.3E	VW1-R-03	-	-	-	-	- -	CIRC 27 MI DIA
4	042115Z	22.9N	163.9E	54-P-08	45	60	9140	960	13/12	25 MI DIA
5	050300Z	23.2N	163.4E	54-P-05	60	80	8880	953	19/13	CIRC 15 MI DIA,OPEN E
6	051530Z	23.8N	162.8E	VW1-R-05	-	-	-	-	- -	CIRC 18 MI DIA
7	052100Z	23.8N	162.4E	54-P-02	60	80	8730	948	21/13	CIRC 25 MI DIA
8	060930Z	24.2N	162.8E	VW1-R-10	-	-	-	-	- -	CIRC 13 MI DIA,OPEN N
9	062142Z	25.5N	163.1E	54-P-07	50	67	8970	958	17/11	CIRC 15 MI DIA
10	071500Z	27.3N	163.5E	VW1-R-10	-	-	-	-	- -	ELLIP 50 MI E-W & 35 MI N-S
11	072145Z	28.1N	163.7E	54-P-07	65	65	9310	969	17/13	ELLIP 50 MI,OPEN SW & NW
12	080330Z	28.2N	164.3E	54-P-12	75	65	9330	-	17/15	CIRC 30 MI DIA,OPEN N
13	081515Z	31.3N	165.3E	VW1-R-20	-	-	-	-	- -	LGE CNTR POORLY DEFINED
14	091230Z	35.0N	170.0E	VW1-R-U	-	-	-	-	- -	RDR EYE VERY POOR
15	091500Z	36.3N	170.1E	VW1-P-30	-	-	9770	-	12/-	RDR EYE VERY POOR

TYPHOON FREDA 03-10 OCT 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
030600Z	19.3N	161.4E	------	------
031200Z	19.9N	162.3E	------	------
031800Z	20.6N	163.4E	------	------
040000Z	21.4N	164.0E	------	------
040600Z	22.1N	164.1E	------	------
041200Z	22.4N	164.1E	------	------
041800Z	22.7N	163.9E	------	------
050000Z	23.0N	163.6E	257-264	------
050600Z	23.3N	163.3E	049-130	------
051200Z	23.6N	162.9E	054-148	------
051800Z	23.9N	162.7E	121-130	------
060000Z	24.3N	162.7E	304-47	281-260
060600Z	24.5N	162.8E	293-159	047-192
061200Z	24.9N	162.9E	286-195	044-185
061800Z	25.3N	163.0E	268-131	107-118
070000Z	25.7N	163.2E	204-121	276-240
070600Z	26.2N	163.4E	238-137	278-461
071200Z	26.7N	163.6E	218-123	279-479
071800Z	27.5N	163.7E	222-140	259-365
080000Z	28.4N	163.7E	104-80	233-274
080600Z	29.5N	164.0E	123-92	244-410
081200Z	30.7N	164.8E	016-84	228-179
081800Z	31.8N	165.9E	327-45	232-217
090000Z	33.0N	167.3E	273-70	134-151
090600Z	34.2N	168.6E	237-186	109-255
091200Z	35.4N	169.8E	237-239	026-328
091800Z	36.8N	170.8E	133-170	023-244
100000Z	38.2N	171.7E	131-177	027-200

AVERAGE 24 HOUR ERROR 136.6 MI
AVERAGE 48 HOUR ERROR 268.1 MI


TYPHOON FREDA
03-10 OCTOBER 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
10/00Z
09/00Z
08/00Z
07/00Z
06/00Z
05/00Z
04/00Z
03/06Z
L(-11)
M(-12)
157°30'E
172°30'E
WAKE I
245
SAIPAN
232
GUAM
TOKYO
40°
30°
20°
140°
150°
160°
170°

TYPHOON GILDA - 190600Z-301800Z OCTOBER 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 11½

2. Calendar days of typhoon intensity - 7¼

3. Total distance traveled during tropical warning period - 2706 MI

B. Characteristics as a typhoon

1. Min observed SLP - 933mb, 280200Z

2. Min observed 850mb height - 3275 ft, 280200Z

3. Min observed 700mb height - 8700 ft, 270040Z

4. Max vertical development - 30,000 ft, 271200Z

II. DEVELOPMENT

A. Initial impetus - Surge in easterlies combined with flow from Southern Hemisphere outdraft.

B. Initial surface vortex

1. Junction vortex at 180600Z

2. Surface pressure less than 1004mb

3. Maximum surface wind - 10 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - NE quadrant of Southern Hemisphere anticyclone

2. Wind velocity over vortex - 140/19 kts

III. STEERING

A. Prior to recurvature - 500mb

B. During recurvature - 500mb

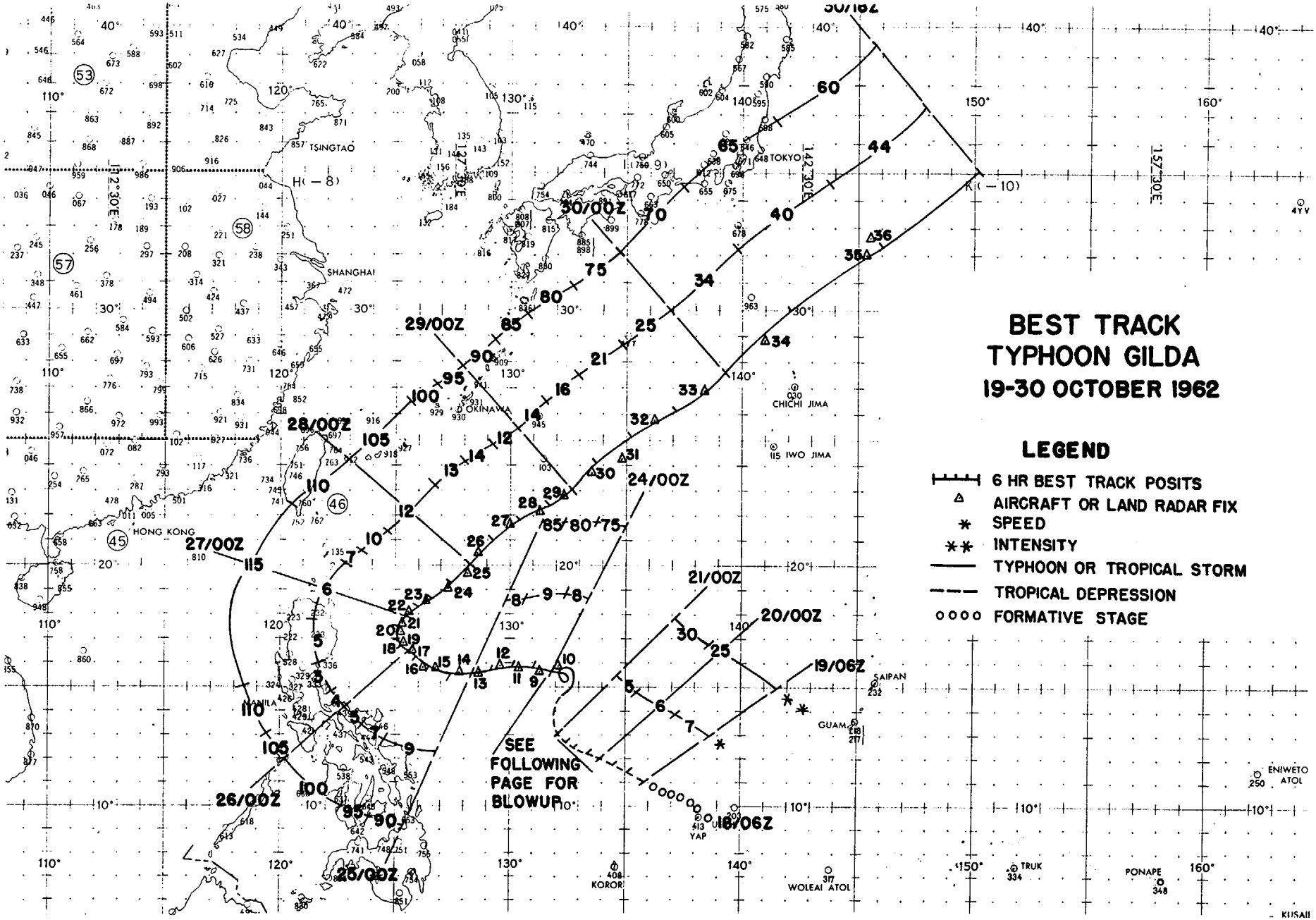
C. After recurvature - 500mb

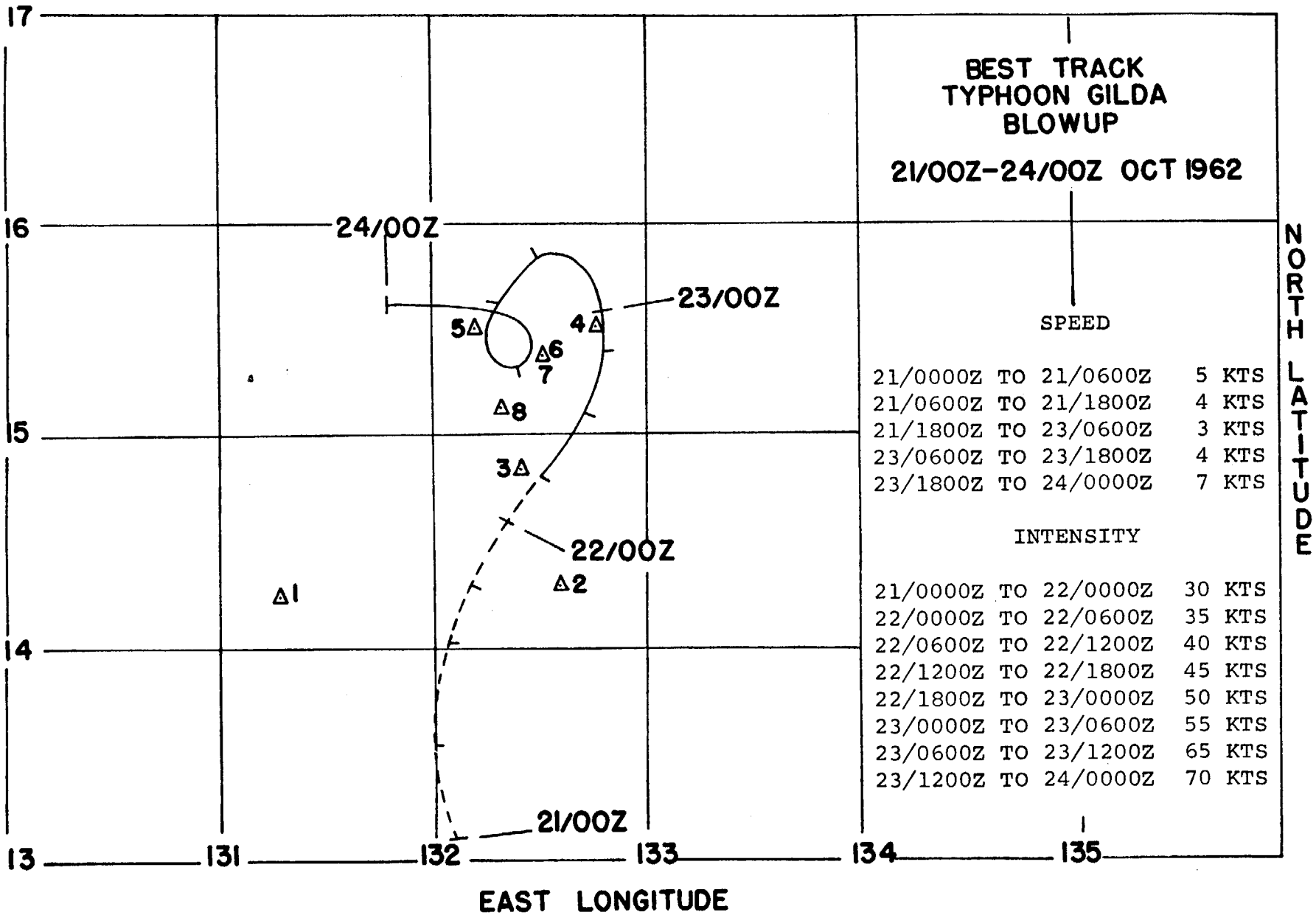
IV. DISSIPATION

A. Causative factor - Cold air

B. Final disposition - Extratropical

V. DAMAGE - No reports received


BEST TRACK
TYPHOON GILDA
19-30 OCTOBER 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
SEE FOLLOWING PAGE FOR BLOWUP
TSINGTAO
SHANGHAI
OKINAWA
HONG KONG
MANILA
TOKYO
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
YAP
KOROR
WOLEAI ATOL
TRUK
PONAPE
ENIWETO ATOL
KUSAIE
27/00Z
28/00Z
29/00Z
30/00Z
24/00Z
21/00Z
20/00Z
19/06Z
18/06Z
26/00Z
25/00Z


BEST TRACK
TYPHOON GILDA
BLOWUP
21/00Z-24/00Z OCT 1962
SPEED
21/0000Z TO 21/0600Z 5 KTS
21/0600Z TO 21/1800Z 4 KTS
21/1800Z TO 23/0600Z 3 KTS
23/0600Z TO 23/1800Z 4 KTS
23/1800Z TO 24/0000Z 7 KTS
INTENSITY
21/0000Z TO 22/0000Z 30 KTS
22/0000Z TO 22/0600Z 35 KTS
22/0600Z TO 22/1200Z 40 KTS
22/1200Z TO 22/1800Z 45 KTS
22/1800Z TO 23/0000Z 50 KTS
23/0000Z TO 23/0600Z 55 KTS
23/0600Z TO 23/1200Z 65 KTS
23/1200Z TO 24/0000Z 70 KTS
24/00Z
23/00Z
22/00Z
21/00Z
1
2
3
4
5
6
7
8
17
16
15
14
13
131
132
133
134
135
NORTH LATITUDE
EAST LONGITUDE

LAND RADAR AND AIRCRAFT FIXES - TYPHOON GILDA

FIX NO.	TIME	LAT.	LONG	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	210245Z	14.2N	131.3E	54-T-05	25	-	-	998	- -	30 MI DIA
2	212200Z	14.2N	132.6E	54-P-U	25	-	-	998	- -	120 MI DIA, NO WALL CLDS
3	220355Z	14.8N	132.4E	54-P-05	40	45	9880	995	12/12	CIRC 10 MI DIA
4	222210Z	15.5N	132.8E	54-P-03	55	50	9890	992	15/08	CIRC 20 MI DIA, OPEN E & N
5	230330Z	15.5N	132.2E	54-P-03	65	60	9760	985	18/10	CIRC
6	231037Z	15.4N	132.4E	VW1-R-05	-	-	-	-	- -	CIRC 15 MI DIA, POORLY DEFINED
7	231534Z	15.4N	132.5E	VW1-R-02	-	-	-	-	- -	VERY DIFFUSE
8	232200Z	15.1N	132.3E	54-P-05	55	60	9740	983	18/07	POORLY DEFINED, OPEN NE & NW
9	240340Z	15.7N	131.4E	54-P-07	50	50	9720	983	20/08	NO WALL CLDS
10	240400Z	15.8N	132.1E	54-P-U	85	-	9820	981	14/-	CIRC 8 MI DIA
11	240950Z	15.8N	130.4E	VW1-R-05	-	-	-	-	- -	45 MI NE-SW & 22 MI NW-SE
12	241530Z	15.9N	129.6E	VW1-R-03	-	-	-	-	- -	CIRC 46 MI DIA
13	242210Z	15.5N	128.6E	54-P-02	75	65	9380	971	18/13	DIA 40 MI
14	250350Z	15.5N	127.8E	54-P-03	90	75	9200	966	16/12	DIA 40 MI
15	251000Z	15.7N	126.8E	VW1-R-05	-	-	-	-	- -	CIRC 30 MI DIA
16	251600Z	15.8N	126.2E	VW1-R-03	-	-	-	-	- -	CIRC 26 MI DIA

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

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
17	252200Z	16.5N	125.8E	54-P-02	75	70	8890	958	15/14	30 MI DIA
18	260330Z	16.8N	125.4E	54-P-02	85	90	8840	942	15/13	40 MI DIA
19	261000Z	16.9N	125.2E	VW1-R-03	-	-	-	-	- -	CIRC 45 MI DIA
20	261600Z	17.4N	125.3E	VW1-R-03	-	-	-	-	- -	CIRC 41 MI DIA
21	262145Z	17.6N	125.3E	54-P-05	-	95	8710	956	14/13	CIRC 36 MI DIA
22	270040Z	18.0N	125.6E	54-P-05	65	95	8700	956	14/12	CIRC 36 MI DIA
23	271000Z	18.5N	126.4E	VW1-R-03	-	-	-	-	- -	CIRC 35 MI DIA
24	271600Z	19.1N	127.2E	VW1-R-03	-	-	-	-	- -	CIRC 35 MI DIA
25	272130Z	19.7N	128.1E	54-P-03	95	-	8850	949	18/17	CIRC 40 MI DIA
26	280200Z	20.4N	128.6E	54-P-02	75	90	8870	933	20/15	CIRC 40 MI DIA
27	281000Z	21.6N	130.0E	VW1-R-05	-	-	-	-	- -	DIA 40 MI,OPEN S-W
28	281530Z	22.2N	131.2E	VW1-R-05	-	-	-	-	- -	DIA 48 MI,OPEN S-W
29	282200Z	22.8N	132.4E	54-P-05	85	95	9130	962	24/08	CIRC 60 MI DIA
30	290400Z	23.7N	133.5E	54-P-04	85	72	9200	966	20/16	CIRC 60 MI DIA,OPEN W & N
31	290910Z	24.2N	134.9E	VW1-R-05	-	-	-	-	- -	CIRC 28 MI DIA,OPEN SW
32	291500Z	25.7N	136.1E	VW1-R-05	-	-	-	-	- -	DIA 38 MI,OPEN E,S & SW
33	292130Z	26.9N	138.4E	54-P-05	110	80	9200	969	13/13	WEAK WALL CLDS
34	300330Z	28.9N	141.0E	54-P-03	90	60	9440	-	18/12	OVAL 25 MI NE-SW
35	301100Z	32.0N	145.4E	VW1-P-U	-	-	-	-	- -	VERY DIFFUSE
36	301545Z	32.7N	145.5E	VW1-P-25	-	-	-	-	- -	VERY DIFFUSE

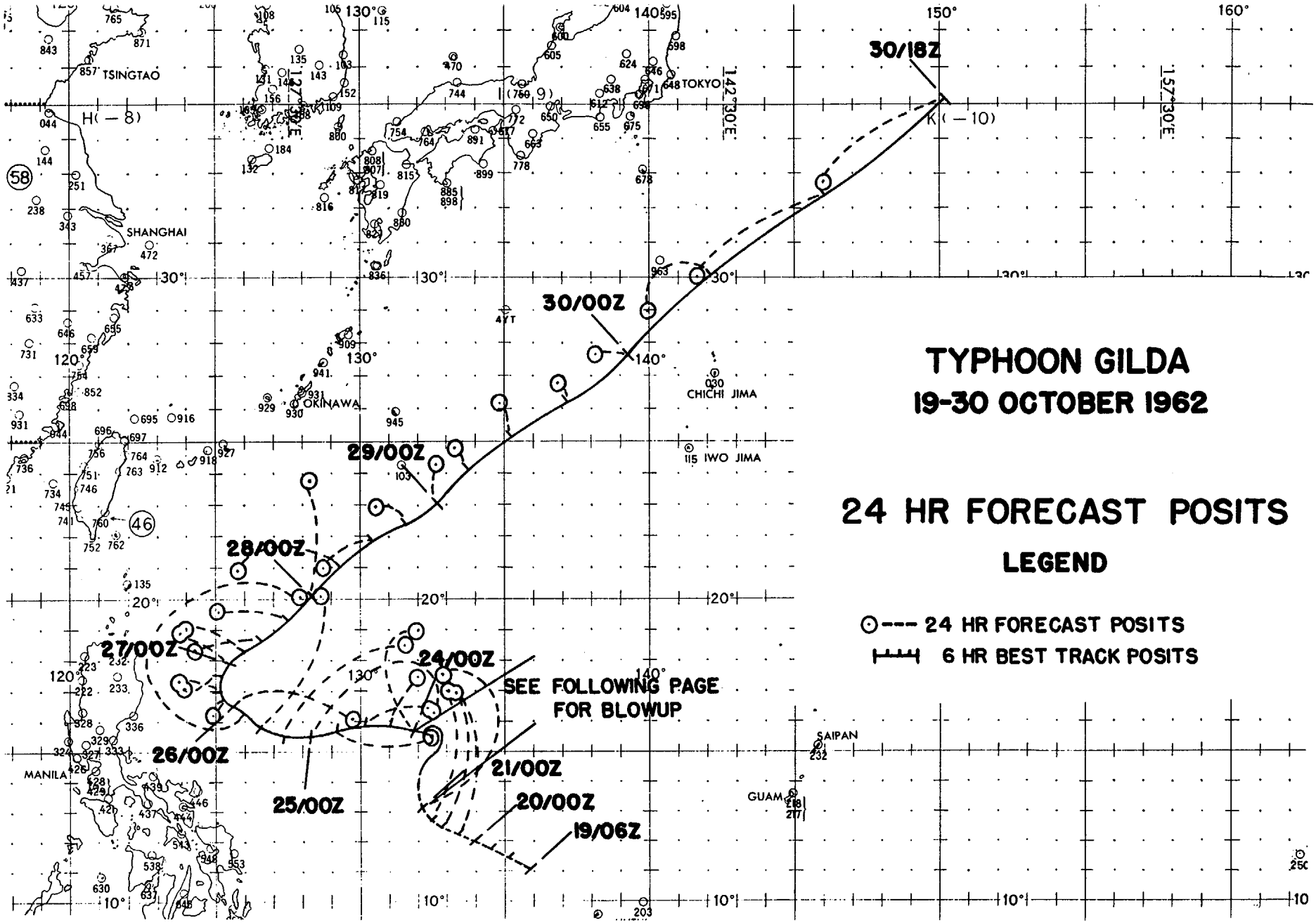
TYPHOON GILDA 19-30 OCT 1962
POSITION AND FORECAST VERIFICATION DATA

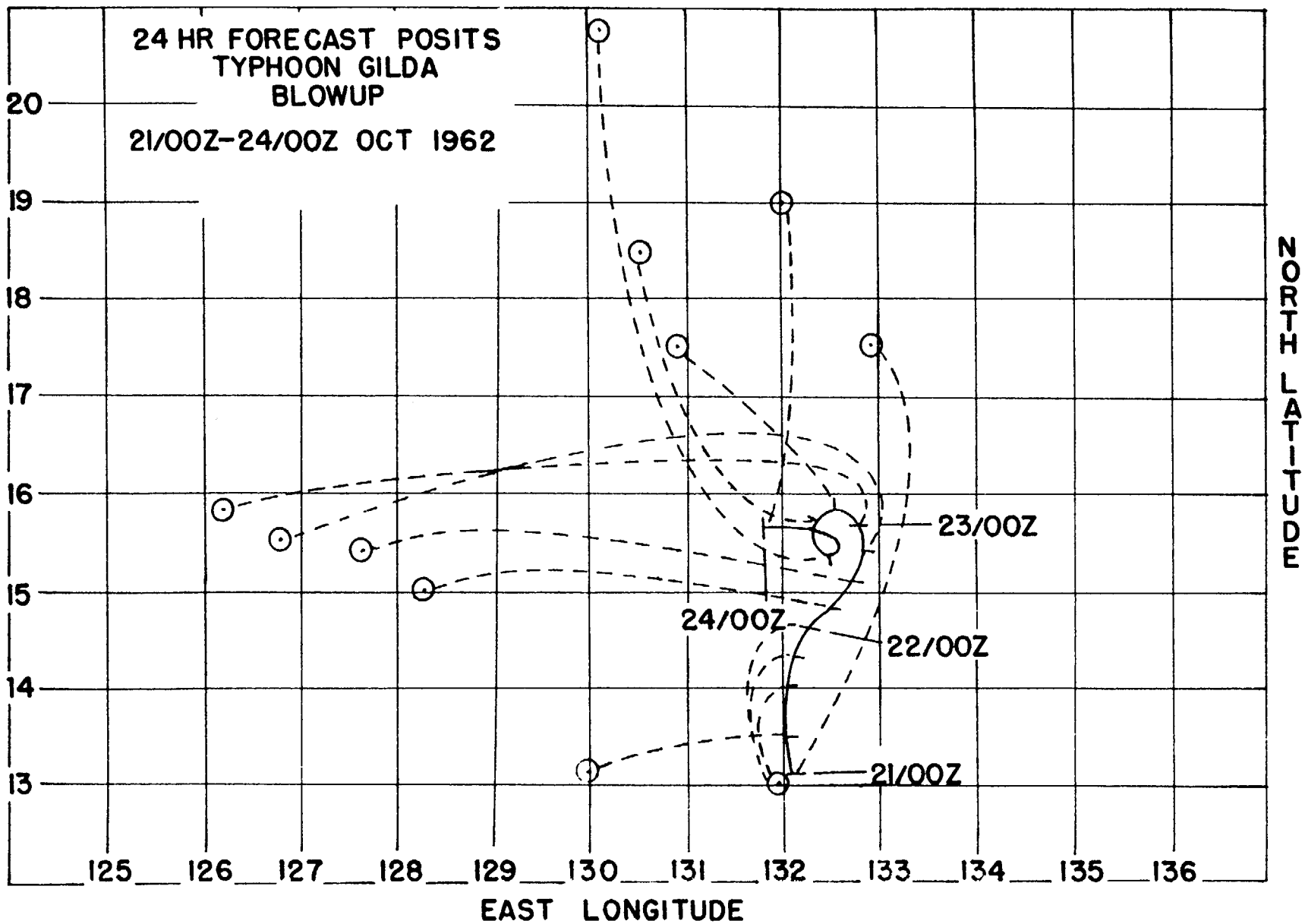
DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
190600Z	11.1N	135.8E	------	------
191200Z	11.4N	135.1E	------	------
191800Z	11.7N	134.5E	------	------
200000Z	12.0N	133.9E	------	------
200600Z	12.2N	133.4E	------	------
201200Z	12.4N	132.8E	------	------
201800Z	12.7N	132.4E	------	------
210000Z	13.1N	132.1E	------	------
210600Z	13.5N	132.0E	------	------
211200Z	14.0N	132.0E	------	------
211800Z	14.3N	132.2E	------	------
220000Z	14.6N	132.3E	------	------
220600Z	14.8N	132.5E	------	------
221200Z	15.1N	132.7E	------	------
221800Z	15.4N	132.8E	------	------
230000Z	15.6N	132.8E	------	------
230600Z	15.8N	132.5E	318-137	------
231200Z	15.6N	132.3E	330-193	------
231800Z	15.3N	132.4E	339-347	------
240000Z	15.6N	131.8E	003-204	------
240600Z	15.8N	131.0E	031-113	354-377
241200Z	15.8N	130.1E	072-132	005-470
241800Z	15.6N	129.2E	092-190	022-723
250000Z	15.5N	128.4E	078-242	029-525
250600Z	15.5N	127.4E	053-293	035-480
251200Z	15.8N	126.5E	026-294	056-405
251800Z	16.3N	126.0E	027-264	076-383
260000Z	16.5N	125.6E	098-244	063-457
260600Z	16.8N	125.3E	216-44	046-524
261200Z	17.0N	125.2E	282-83	035-655
261800Z	17.5N	125.2E	250-77	036-576

TYPHOON GILDA 19-30 OCT 1962 (CONT'D)
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
270000Z	17.9N	125.6E	298-113	073-235
270600Z	18.3N	126.0E	291-122	300-230
271200Z	18.6N	126.6E	265-135	279-218
271800Z	19.3N	127.5E	277-137	264-262
280000Z	20.1N	128.4E	360-222	278-290
280600Z	21.0N	129.3E	268-190	273-318
281200Z	21.8N	130.4E	240-96	260-380
281800Z	22.4N	131.7E	300-68	268-330
290000Z	23.0N	132.7E	360-69	281-247
290600Z	24.1N	133.8E	330-52	291-208
291200Z	25.2N	135.2E	345-65	270-95
291800Z	26.2N	137.2E	338-38	027-89
300000Z	27.6N	139.3E	270-71	019-135
300600Z	30.0N	142.2E	244-129	294-55
301200Z	32.3N	146.1E	238-270	272-63
301800Z	35.2N	150.2E	236-263	232-185

AVERAGE 24 HOUR ERROR 158.0 MI
AVERAGE 48 HOUR ERROR 330.2 MI


TYPHOON GILDA
19-30 OCTOBER 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
SEE FOLLOWING PAGE FOR BLOWUP
30/18Z
30/00Z
29/00Z
28/00Z
27/00Z
26/00Z
25/00Z
24/00Z
21/00Z
20/00Z
19/06Z
TSINGTAO
SHANGHAI
OKINAWA
TOKYO
CHICHI JIMA
IWO JIMA
MANILA
SAIPAN
GUAM
H(-8)
I(760 9)
K(-10)
142°30'E
157°30'E


24 HR FORECAST POSITS
TYPHOON GILDA
BLOWUP
21/00Z-24/00Z OCT 1962
20
19
18
17
16
15
14
13
125
126
127
128
129
130
131
132
133
134
135
136
EAST LONGITUDE
NORTH LATITUDE
23/00Z
24/00Z
22/00Z
21/00Z

TYPHOON IVY - 280600Z-291800Z OCTOBER 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 1½
2. Calendar days of typhoon intensity - 1
3. Total distance traveled during tropical warning period - 342 MI

B. Characteristics as a typhoon

1. Min observed SLP - 997mb, 280505Z
2. Min observed 850mb height - 4860 ft, 280505Z
3. Min observed 700mb height - 10130 ft, 280505Z
4. Max vertical development - 25,000 ft, 281200Z

II. DEVELOPMENT

A. Initial impetus - Surge from westerlies into MPT and then into the easterlies.

B. Initial surface vortex

1. Junction vortex at 260000Z
2. Surface pressure less than 1010mb
3. Maximum surface wind - 10 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone
2. Wind velocity over vortex - 070/17 kts

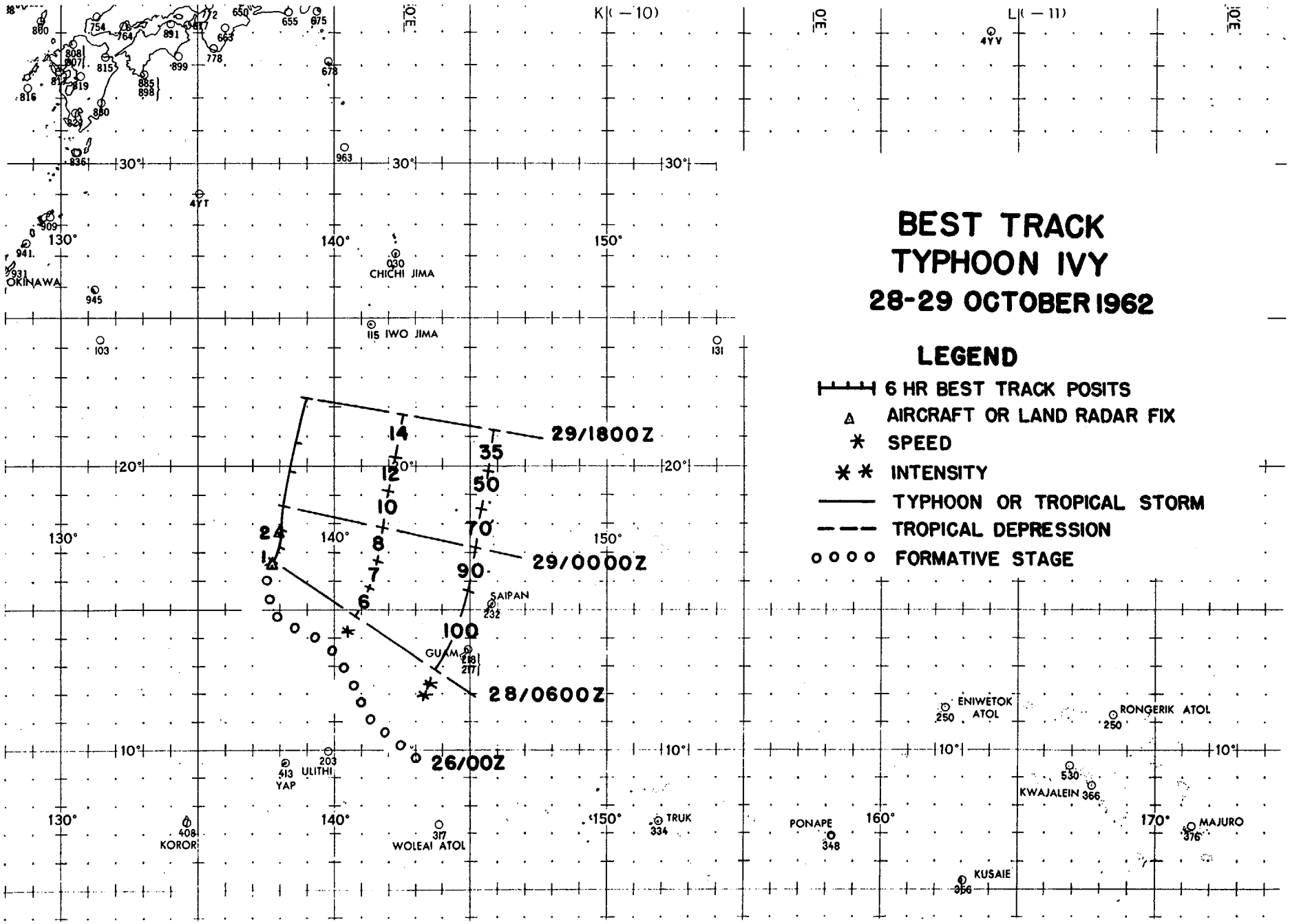
III. STEERING

A. Prior to recurvature - NA
B. During recurvature - NA
C. After recurvature - 500mb

IV. DISSIPATION

A. Causative factor - Typhoon GILDA
B. Final disposition - Absorbed by Typhoon GILDA

V. DAMAGE - No reports received


BEST TRACK
TYPHOON IVY
28-29 OCTOBER 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
29/1800Z
29/0000Z
28/0600Z
26/00Z
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO

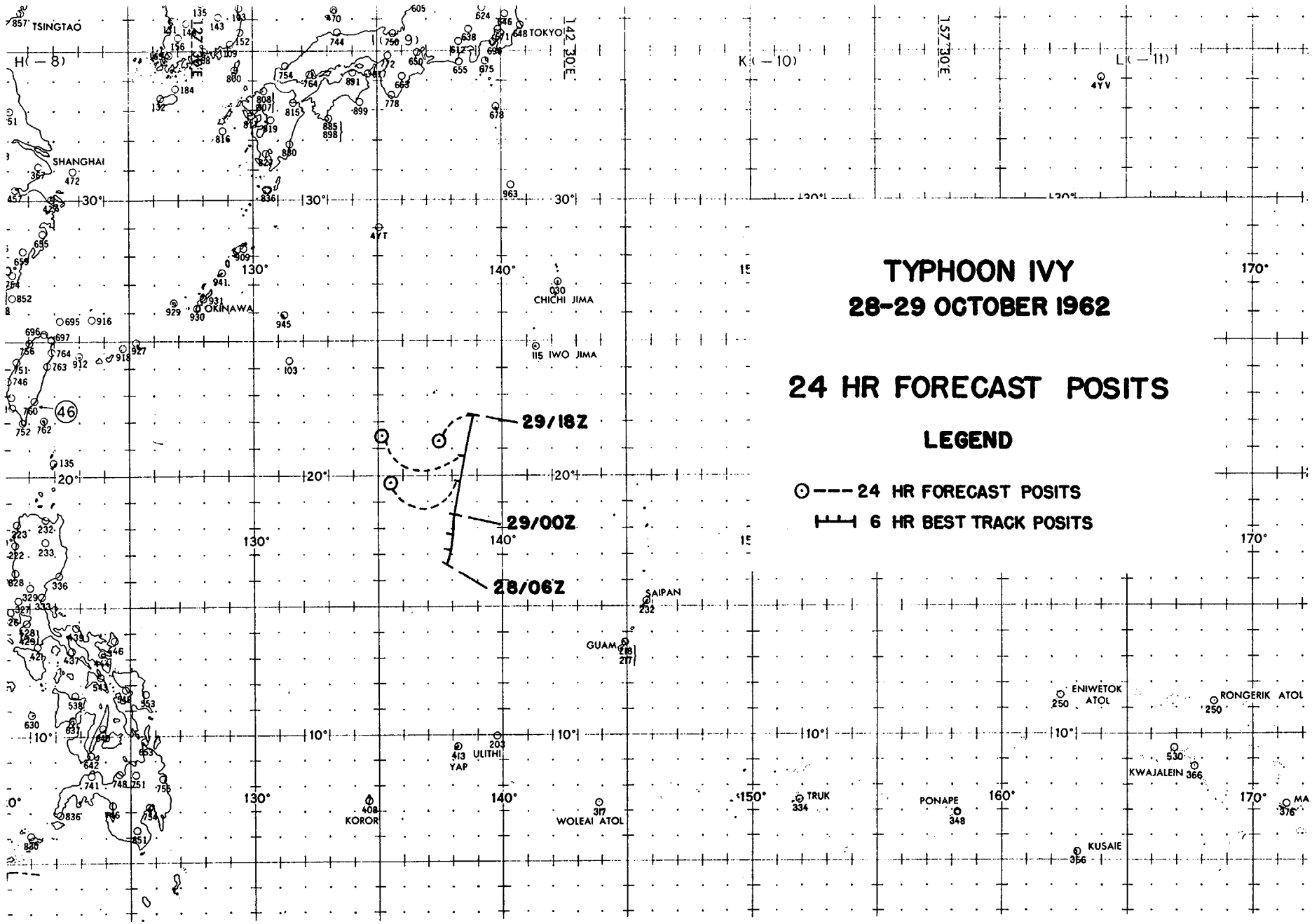
LAND RADAR AND AIRCRAFT FIXES - TYPHOON IVY

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	280505Z	16.5N	137.7E	54-P-04	125	35	10130	997	17/10	WALL CLD S
2	281330Z	17.4N	138.0E	VW1-R-10	-	-	-	-	- -	DIFFUSE, DIA 20 MI, NO WALL CLDS

TYPHOON IVY 28-29 OCT 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG.	DISTANCE	48 HR. ERROR DEG.	DISTANCE
280600Z	16.7N	137.7E	------		------	
281200Z	17.2N	138.0E	------		------	
281800Z	17.9N	138.0E	------		------	
290000Z	18.7N	138.1E	------		------	
290600Z	19.8N	138.3E	272	154	------	
291200Z	20.9N	138.5E	281	191	------	
291800Z	22.3N	138.9E	234	95	------	

AVERAGE 24 HOUR ERROR 146.7 MI


TYPHOON IVY
28-29 OCTOBER 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
29/18Z
29/00Z
28/06Z
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
TRUK
PONAPE
KUSAIE
KWAJALEIN
ENIWETOK ATOL
RONGERIK ATOL
127°30'E
142°30'E
157°30'E
H(-8)
K(-10)
L(-11)
46
9

TYPHOON JEAN - 060600Z-121200Z NOVEMBER 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 6¼

2. Calendar days of typhoon intensity - 3¼

3. Total distance traveled during tropical warning period - 948 MI

B. Characteristics as a typhoon

1. Min observed SLP - 960mb, 100515Z

2. Min observed 850mb height - 3940 ft, 100515Z

3. Min observed 700mb height - 9380 ft, 100515Z

4. Max vertical development - 25,000 ft, 100000Z

II. DEVELOPMENT

A. Initial impetus - Easterly wave and polar trough fractured after superposition.

B. Initial surface vortex

1. Junction vortex at 030000Z

2. Surface pressure less than 1008mb

3. Maximum surface wind - 15 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone

2. Wind velocity over vortex - 050/25 kts

III. STEERING

A. Prior to recurvature - 500mb

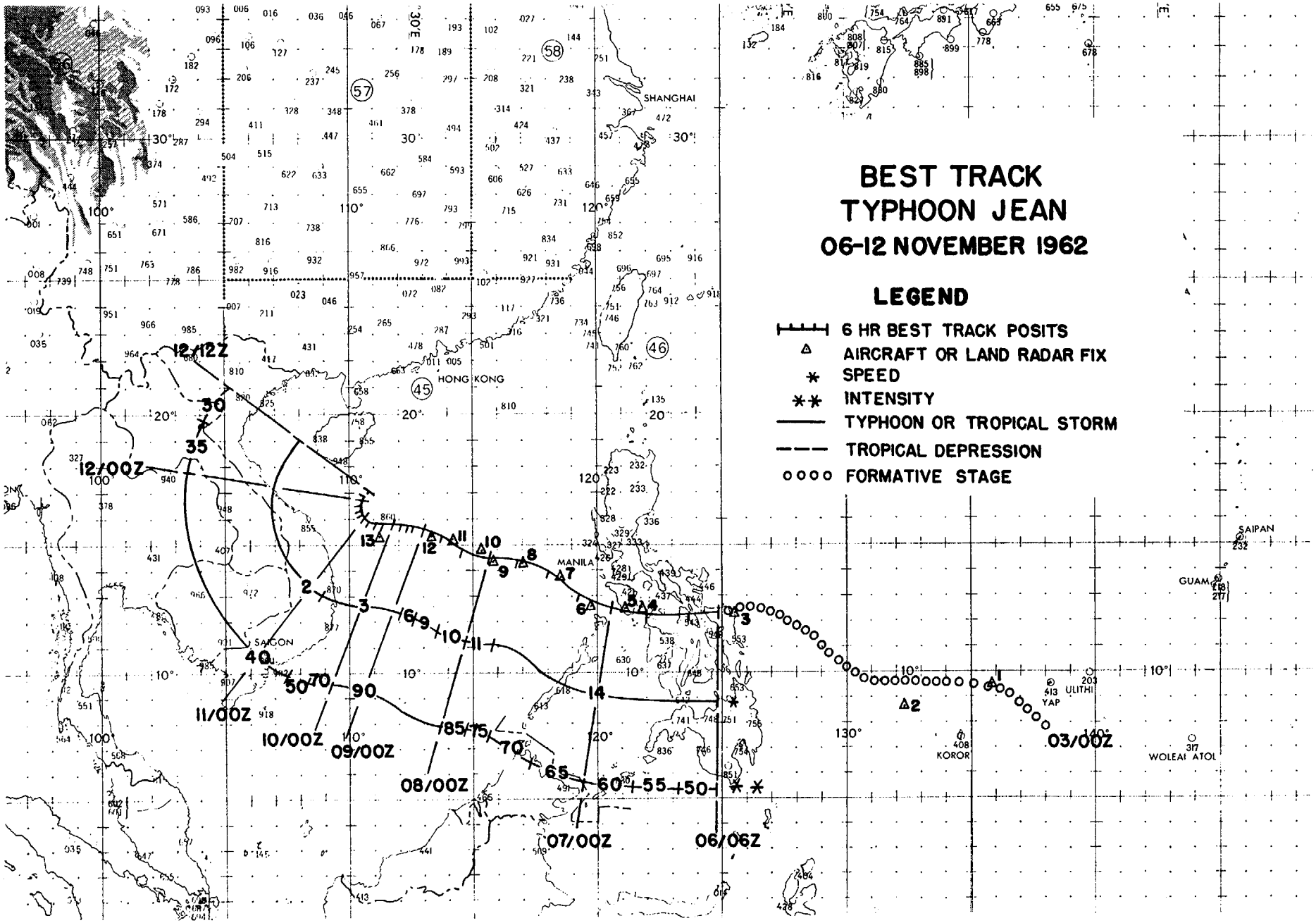
B. During and after recurvature - NA

IV. DISSIPATION

A. Causative factor - Lack of upper level divergence

B. Final disposition - Dissipated

V. DAMAGE - No damage reports received


BEST TRACK
TYPHOON JEAN
06-12 NOVEMBER 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
SHANGHAI
HONG KONG
MANILA
SAIGON
SAIPAN
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
12/12Z
12/00Z
11/00Z
10/00Z
09/00Z
08/00Z
07/00Z
06/06Z
03/00Z

LAND RADAR AND AIRCRAFT FIXES - TYPHOON JEAN

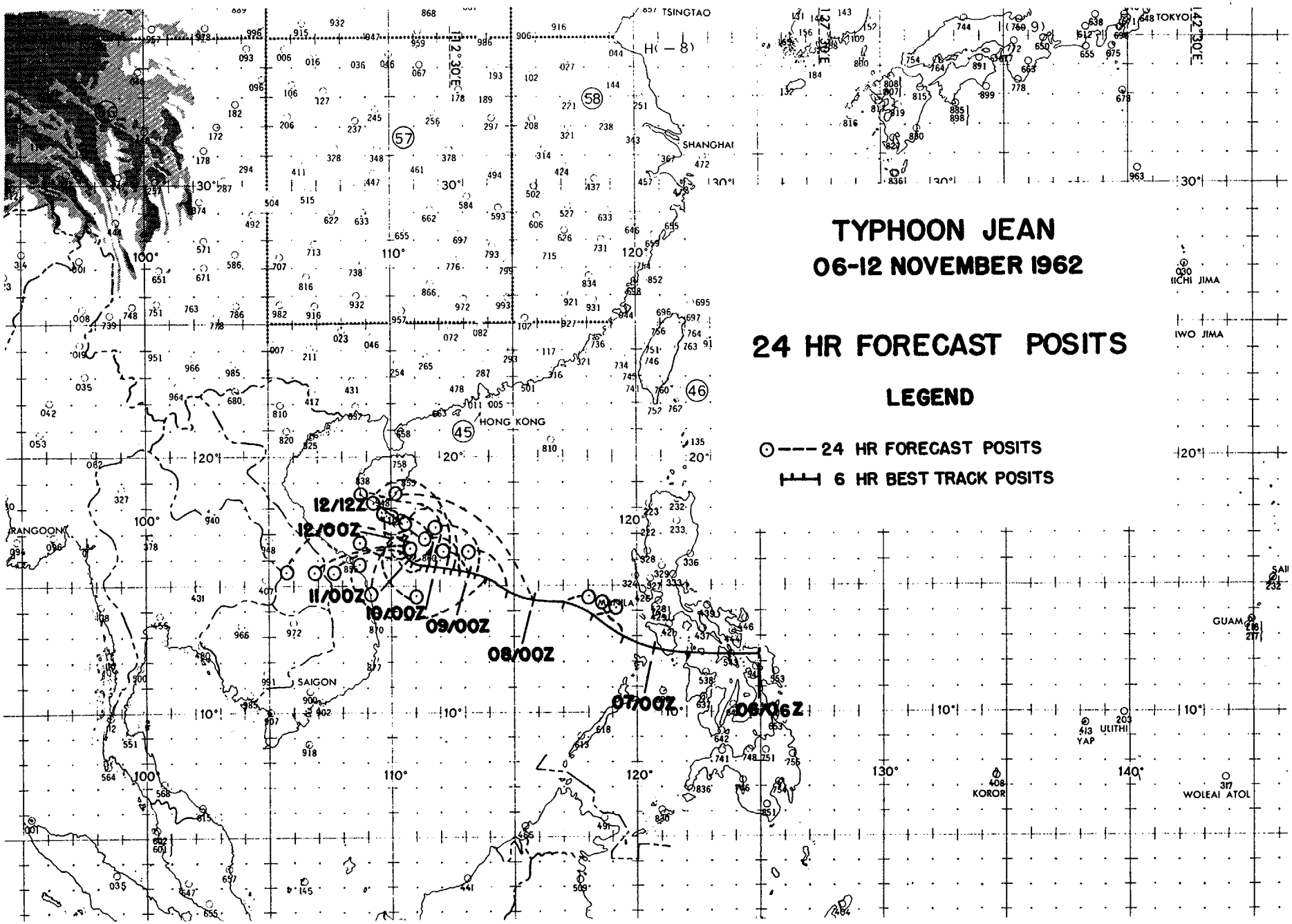
FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	040450Z	09.5N	135.8E	54-P-02	25	-	-	1003	- -	---
2	050158Z	08.7N	132.2E	54-P-U	15	-	-	1006	- -	---
3	060415Z	12.3N	125.4E	54-P-03	60	30#	4465#	994	- -	WALL CLDS ALL QUADS
4	061735Z	12.5N	121.8E	VW1-R-02	-	-	-	-	- -	CIRC 16 MI DIA
5	062150Z	12.4N	121.1E	54-P-01	-	70*	-	-	00/-01*	---
6	070315Z	12.7N	119.8E	54-P-03	45	55*	19000*	984	01/01*	CIRC 30 MI DIA
7	070930Z	13.7N	118.6E	VW1-R-03	-	-	-	-	- -	CIRC 35 MI DIA
8	071530Z	14.2N	117.0E	VW1-R-03	-	-	-	-	- -	ELLIP 60 MI N-S & 40 MI E-W, OPEN NE
9	072230Z	14.3N	115.9E	54-P-03	75	75	9560	966	15/13	CIRC 12 MI DIA
10	080330Z	14.8N	115.3E	54-P-03	75	90	9480	968	15/13	CIRC 20 MI DIA
11	081000Z	15.2N	114.1E	VW1-P-05	80	-	-	988	- -	CIRC 40 MI DIA, OPEN E
12	081530Z	15.4N	113.4E	VW1-R-03	-	-	-	-	- -	CIRC 45 MI DIA, OPEN NE
13	100515Z	15.4N	111.1E	54-P-05	45	80	9380	960	15/11	CIRC 20 MI DIA, OPEN E & S

850MB DATA
* 500MB DATA

TYPHOON JEAN 06-12 NOV 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
060600Z	12.3N	124.9E	------	------
061200Z	12.3N	123.5E	------	------
061800Z	12.3N	122.0E	------	------
070000Z	12.5N	120.6E	------	------
070600Z	13.1N	119.3E	335-85	------
071200Z	14.0N	118.1E	082-57	------
071800Z	14.3N	116.8E	078-74	------
080000Z	14.4N	115.6E	308-400	------
080600Z	14.8N	114.7E	319-85	328-318
081200Z	15.3N	113.8E	327-70	358-123
081800Z	15.5N	113.3E	327-123	354-152
090000Z	15.5N	113.0E	315-73	318-240
090600Z	15.6N	112.7E	315-104	319-332
091200Z	15.6N	112.3E	313-172	322-274
091800Z	15.7N	112.1E	315-192	320-365
100000Z	15.7N	111.7E	316-239	315-254
100600Z	15.7N	111.4E	322-192	315-288
101200Z	15.8N	111.1E	330-144	312-346
101800Z	15.8N	110.8E	339-118	311-364
110000Z	16.0N	110.6E	015-24	308-406
110600Z	16.2N	110.6E	285-109	331-141
111200Z	16.3N	110.5E	254-175	314-280
111800Z	16.5N	110.5E	254-206	321-178
120000Z	16.7N	110.5E	255-286	294-170
120600Z	16.9N	110.6E	210-160	274-303
121200Z	17.1N	110.7E	171-152	243-198

AVERAGE 24 HOUR ERROR 147.3 MI
AVERAGE 48 HOUR ERROR 262.9 MI


TYPHOON JEAN
06-12 NOVEMBER 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
12/12Z
12/00Z
11/00Z
10/00Z
09/00Z
08/00Z
07/00Z
06/06Z
TSINGTAO
SHANGHAI
HONG KONG
TOKYO
ICHI JIMA
IWO JIMA
RANGOON
SAIGON
MANILA
GUAM
YAP
ULITHI
KOROR
WOLEAI ATOL
SAI
100°
110°
120°
130°
140°
142°30'E
112°30'E
127°30'E
30°
20°
10°

TYPHOON KAREN - 071800Z-180000Z NOVEMBER 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 10¼

2. Calendar days of typhoon intensity - 9½

3. Total distance traveled during tropical warning period - 4176 MI

B. Characteristics as a typhoon

1. Min observed SLP - 897mb, 122150Z

2. Min observed 850mb height - 1900 ft, 122150Z

3. Min observed 700mb height - 7220 ft, 090340Z

4. Max vertical development - 45,000 ft, 130000Z

II. DEVELOPMENT

A. Initial impetus - Surge from W side of MPT combined with large divergent field of Southern Hemisphere outdraft.

B. Initial surface vortex

1. Embedded vortex at 060000Z

2. Surface pressure less than 1010mb

3. Maximum surface wind 10 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - NE quadrant of Southern Hemisphere anticyclone

2. Wind velocity over vortex - 150/21 kts

III. STEERING

A. Prior to recurvature - 200mb

B. During recurvature - 200mb

C. After recurvature - 300mb

IV. DISSIPATION

A. Causative factor - Cold air

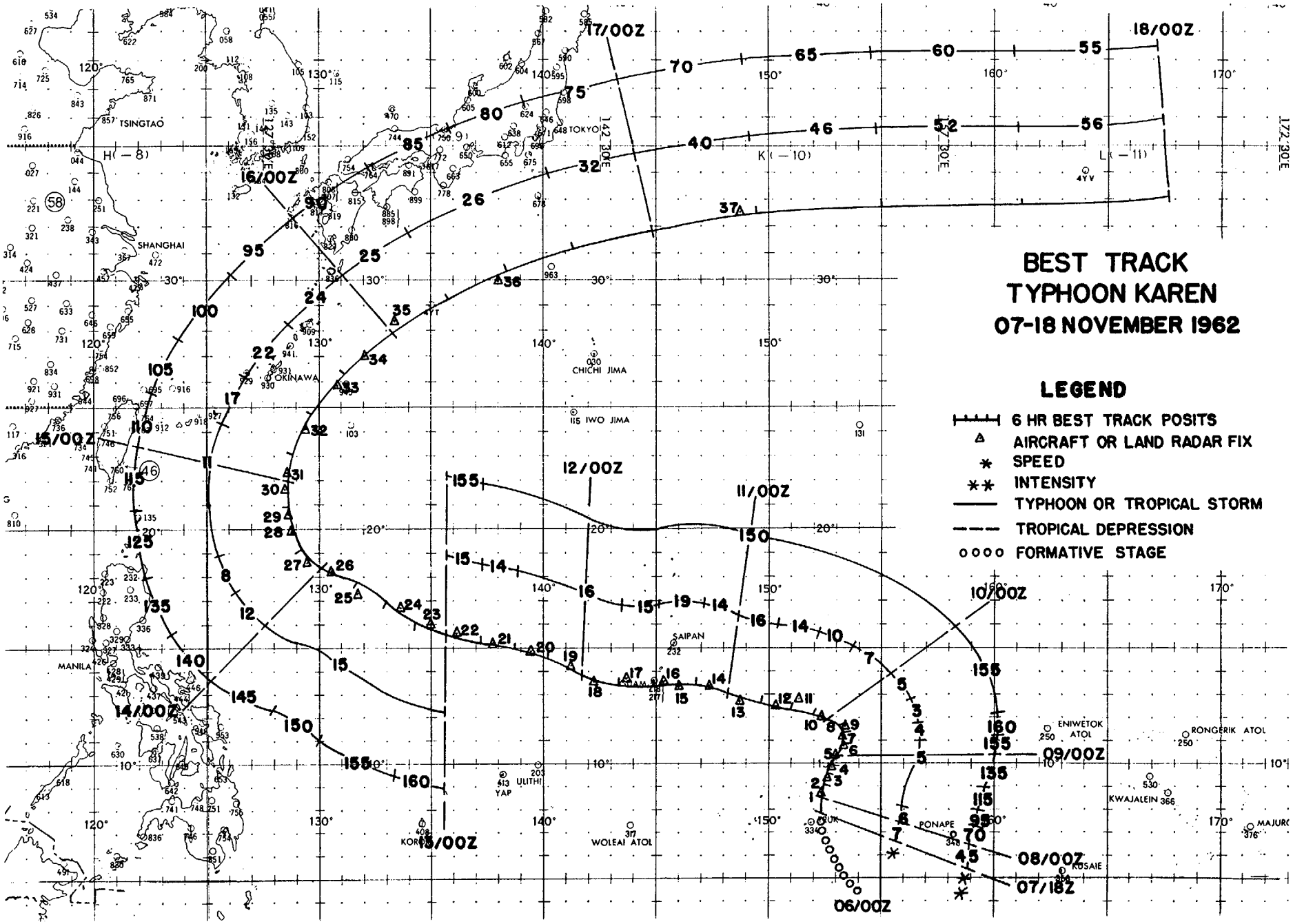
B. Final disposition - Extratropical

V. DAMAGE

A. Total lives lost - 11

B. Total monetary value - $250,000,000

C. Types of property - All types


BEST TRACK
TYPHOON KAREN
07-18 NOVEMBER 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
TSINGTAO
SHANGHAI
OKINAWA
TOKYO
CHICHI JIMA
IWO JIMA
SAIPAN
MANILA
YAP
ULITHI
WOLEAI ATOL
PONAPE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
KOSAIE
MAJURO
06/00Z
07/18Z
08/00Z
09/00Z
10/00Z
11/00Z
12/00Z
14/00Z
15/00Z
16/00Z
17/00Z
18/00Z

LAND RADAR AND AIRCRAFT FIXES - TYPHOON KAREN

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	080100Z	08.6N	152.4E	VW1-R-02	-	-	-	-	- -	DIA 22 MI,OPEN N & W
2	080430Z	08.8N	152.4E	VW1-R-03	-	-	-	-	- -	DIA 11 MI
3	081040Z	09.4N	152.6E	VW1-R-02	-	-	-	-	- -	CIRC 10 MI DIA,WELL DEF
4	081530Z	09.8N	152.8E	VW1-R-02	-	-	-	-	- -	OVAL 7 MI E-W,9 MI N-S
5	082220Z	10.3N	153.0E	54-P-05	130	90	7790	917	21/16	CIRC 5 MI DIA
6	090340Z	10.7N	153.2E	54-P-05	150	150	7220	899	24/14	CIRC 6 MI DIA
7	090930Z	11.2N	153.3E	VW1-R-04	-	-	-	-	- -	7 MI DIA
8	091545Z	11.5N	153.2E	VW1-R-04	-	-	-	-	- -	7 MI DIA,CONCENTRIC SPIRAL BANDS 40 MI DIA
9	092200Z	11.7N	153.3E	54-P-05	50	90	9000	926	16/16	CIRC 8 MI DIA
10	100400Z	12.0N	152.4E	54-P-06	90	125	7790	908	18/15	CIRC 17 MI DIA
11	101015Z	12.8N	151.2E	VW1-R-10	-	-	-	-	- -	CIRC 12 MI DIA
12	101550Z	12.4N	150.3E	VW1-R-05	-	-	-	-	- -	CIRC 10 MI DIA, CONCENTRIC BAND 70 MI DIA
13	102200Z	12.9N	148.7E	54-P-02	-	120	7740	917	18/15	CIRC 14 MI DIA
14	110400Z	13.3N	147.3E	54-P-03	125	125	7560	908	19/17	CIRC 8 MI DIA,WELL DEF
15	110730Z	13.3N	146.0E	LND/RDR	-	-	-	-	- -	---
16	111015Z	13.5N	145.4E	VW1-R-01	-	-	-	-	- -	8 MI DIA,OUTER CIRCLE 35 MI DIA
17	111545Z	13.7N	143.6E	VW1-R-05	-	-	-	-	- -	8 MI DIA,OUTER CIRCLE 28 MI DIA

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

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
18	112320Z	13.5N	142.2E	54-P-05	130	150	7690	917	18/16	OVAL 40 MI N-S,30 MI E-W
19	120410Z	14.3N	141.1E	54-P-06	130	130	7740	-	17/17	25 MI DIA
20	120930Z	14.8N	139.4E	VW1-R-05	-	-	-	-	- -	CIRC 30 MI DIA
21	121530Z	15.2N	137.9E	VW1-R-03	-	-	-	-	- -	CIRC 25 MI DIA
22	122150Z	15.6N	136.1E	54-P	145	120	7240	897	22/18	CIRC 25 MI DIA
23	130300Z	16.0N	135.0E	54-P-02	150	-	7300	898	21/18	CIRC 35 MI DIA
24	130935Z	16.6N	133.6E	VW1-R-10	-	-	-	-	- -	20 MI DIA
25	131545Z	17.4N	131.9E	VW1-R-05	-	-	-	-	- -	CIRC 22 MI DIA
26	132200Z	18.2N	130.6E	54-P-05	130	125	7610	913	18/18	CIRC 30 MI DIA
27	140345Z	18.6N	129.5E	54-P-U	130	120	7700	916	19/17	OVAL 20 MI LONG
28	141130Z	19.8N	128.8E	VW1-R-05	-	-	-	-	- -	CIRC 34 MI DIA
29	141530Z	20.5N	128.7E	VW1-R-03	-	-	-	-	- -	CIRC 70 MI DIA
30	142200Z	21.7N	128.5E	54-P-U	-	-	-	-	- -	---
31	150300Z	22.4N	128.7E	54-P-03	85	85	8380	936	15/14	CIRC 20 MI DIA,POOR DEF
32	151000Z	24.2N	129.3E	VW1-R-05	-	-	-	-	- -	DIA 58 MI,OPEN S-NW
33	151555Z	25.9N	130.9E	VW1-R-05	-	-	-	-	- -	20 MI DIA,OPEN SW SEMI-CIRCLE
34	152225Z	27.0N	132.0E	54-P-08	65	65	8600	948	17/15	CIRC 40 MI DIA,OPEN N&W
35	160055Z	28.4N	133.4E	56-P-03	90	60	8950	960	13/13	30 MI DIA,OPEN SW-N

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

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
36	161105Z	30.0N	138.0E	VW1-P-U	-	-	-	-	- -	NO RDR PRESENTATION
37	170516Z	32.5N	148.8E	54-P-05	75	75	9550	-	14/-	ELLIP 10X3 MI

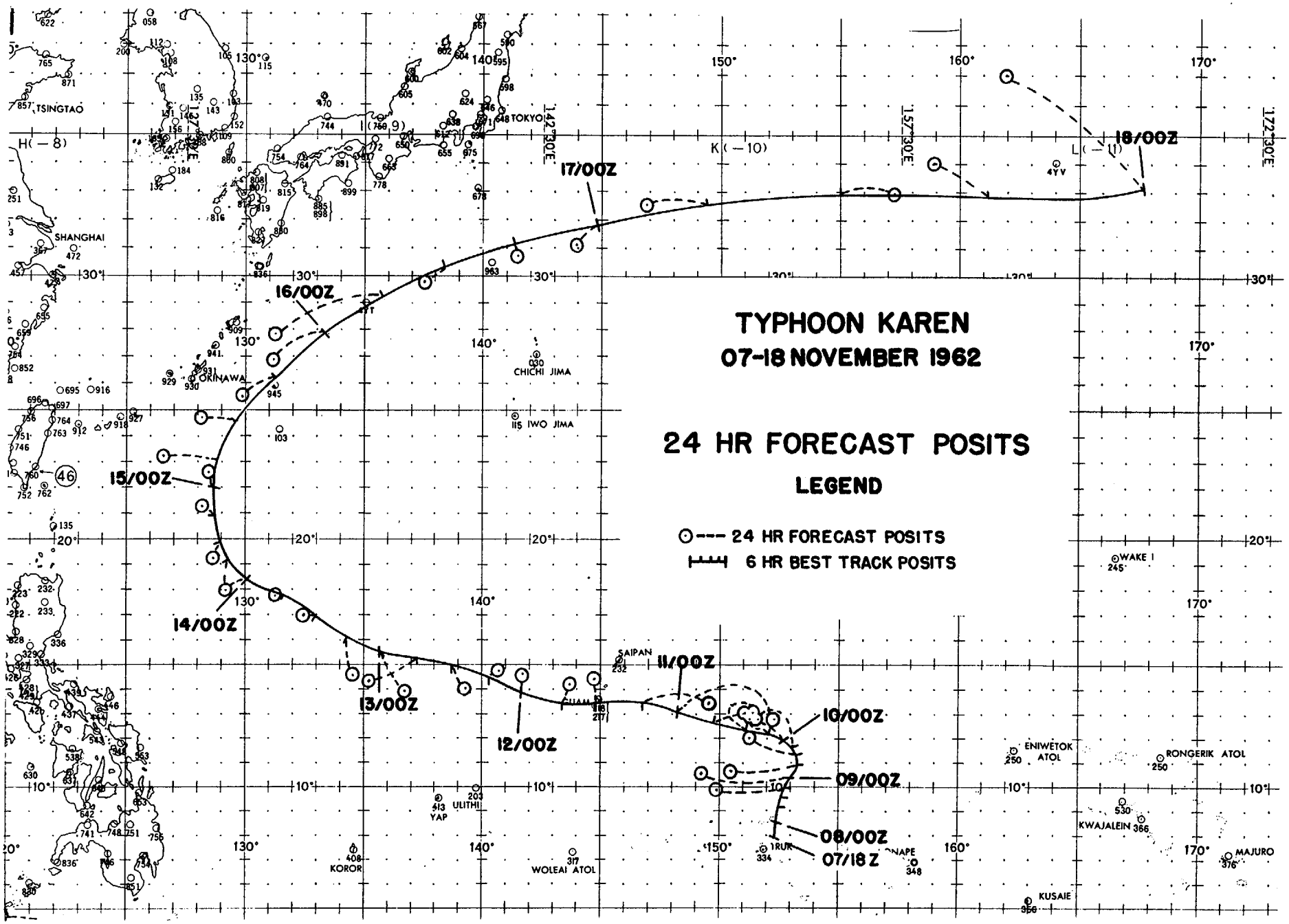
TYPHOON KAREN 07-18 NOV 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
071800Z	07.8N	152.4E	------	------
080000Z	08.5N	152.4E	------	------
080600Z	09.2N	152.5E	------	------
081200Z	09.6N	152.6E	------	------
081800Z	10.0N	152.7E	267-172	------
090000Z	10.4N	153.1E	268-223	------
090600Z	10.9N	153.3E	263-163	------
091200Z	11.4N	153.3E	293-124	------
091800Z	11.6N	153.2E	304-95	283-314
100000Z	11.9N	152.7E	302-73	284-322
100600Z	12.1N	152.0E	317-54	286-246
101200Z	12.3N	151.0E	036-57	308-216
101800Z	12.6N	149.7E	071-91	322-137
110000Z	13.1N	148.2E	097-242	352-96
110600Z	13.4N	146.8E	090-170	026-96
111200Z	13.3N	144.8E	360-60	056-180
111800Z	13.4N	143.3E	033-60	065-245
120000Z	13.9N	141.7E	356-40	091-442
120600Z	14.5N	140.3E	072-35	081-306
121200Z	14.9N	138.7E	146-72	360-52
121800Z	15.2N	137.3E	246-129	045-40
130000Z	15.5N	135.7E	150-124	240-74
130600Z	16.1N	134.3E	170-90	050-36
131200Z	17.0N	133.0E	300-65	130-184
131800Z	17.8N	131.7E	273-15	228-182
140000Z	18.3N	130.1E	248-60	148-280
140600Z	19.1N	129.2E	192-75	166-190
141200Z	19.9N	128.9E	184-30	113-70
141800Z	20.9N	128.6E	314-33	092-25

TYPHOON KAREN 07-18 NOV 1962
POSITION AND FORECAST VERIFICATION DATA (CONT'D)

DTG	STORM POSITION LAT.	LONG	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
150000Z	22.0N	128.7E	002-42	210-140
150600Z	23.1N	128.9E	272-125	208-173
151200Z	24.7N	129.7E	272-84	198-126
151800Z	26.3N	131.3E	237-88	139-47
160000Z	27.9N	133.4E	244-132	152-72
160600Z	29.2N	135.7E	252-250	273-142
161200Z	30.3N	138.4E	242-56	333-46
161800Z	31.2N	141.3E	156-32	244-156
170000Z	31.8N	144.9E	229-62	249-213
170600Z	32.5N	149.5E	260-132	254-450
171200Z	32.8N	155.0E	087-114	252-256
171800Z	32.8N	161.2E	305-130	273-268
180000Z	33.1N	167.8E	310-376	008-90

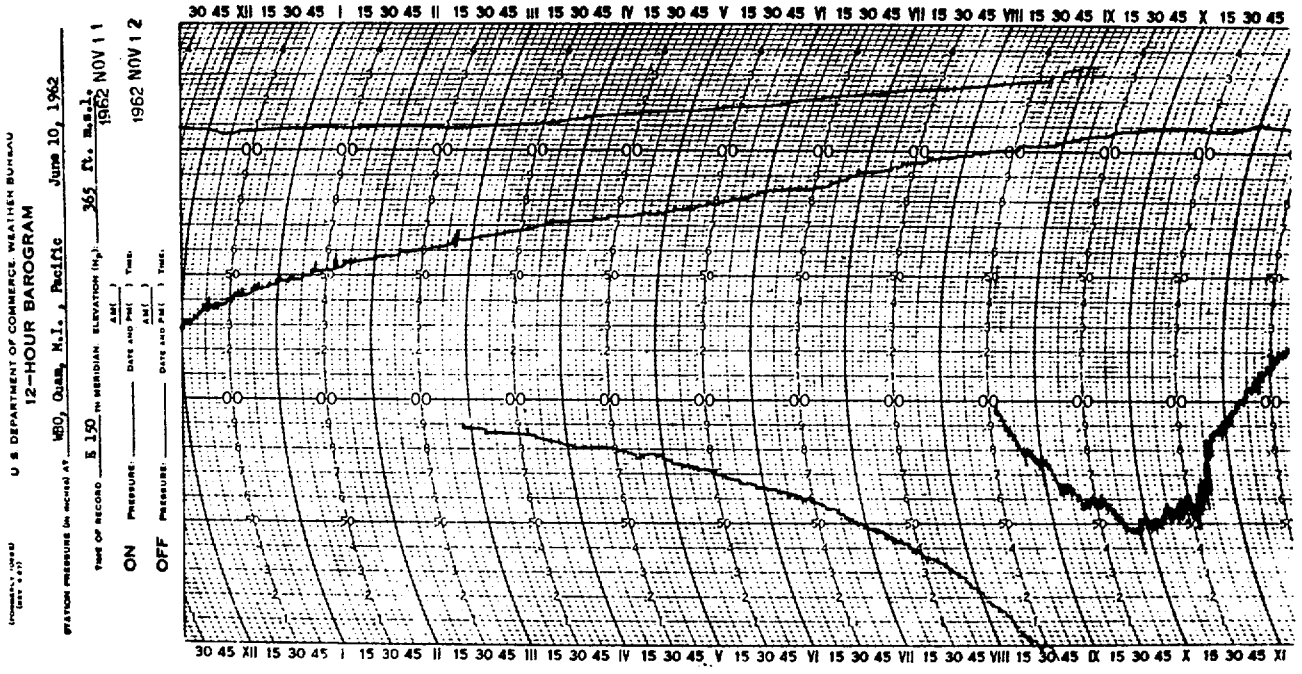
AVERAGE 24 HOUR ERROR 104.6 MI
AVERAGE 48 HOUR ERROR 173.9 MI

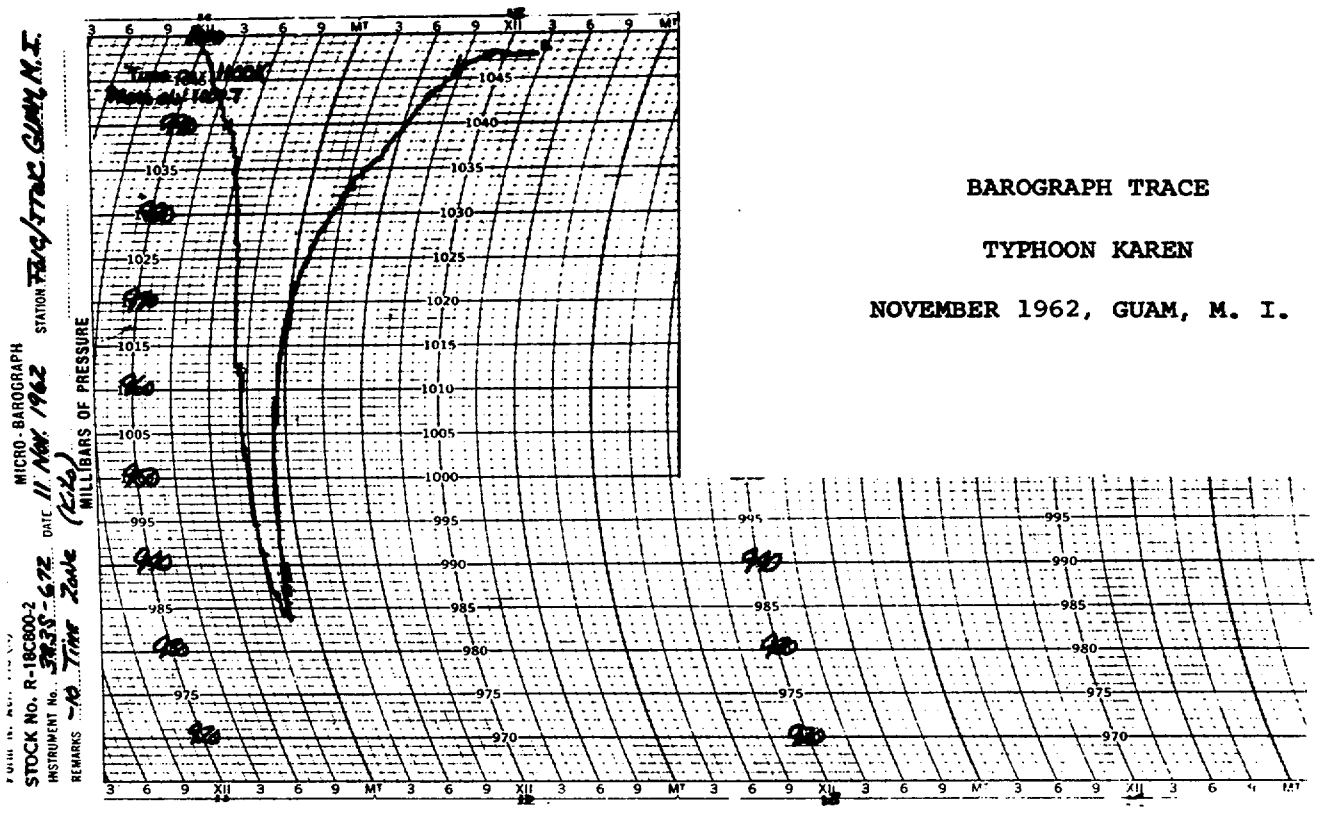

TYPHOON KAREN
07-18 NOVEMBER 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
07/18 Z
08/00Z
09/00Z
10/00Z
11/00Z
12/00Z
13/00Z
14/00Z
15/00Z
16/00Z
17/00Z
18/00Z
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
ULITHI
YAP
KOROR
WOLEAI ATOL
IRUK
PONAPE
ENIWETOK ATOL
RONGERIK ATOL
KWAJALEIN
MAJURO
WAKE I
KUSAIE
H(-8)
I(-9)
K(-10)
L(-11)
127°30'E
142°30'E
157°30'E
172°30'E

TYPHOON KAREN

NOVEMBER 1962, GUAM, M. I.

U. S. WEATHER BUREAU
BAROGRAM TRACE

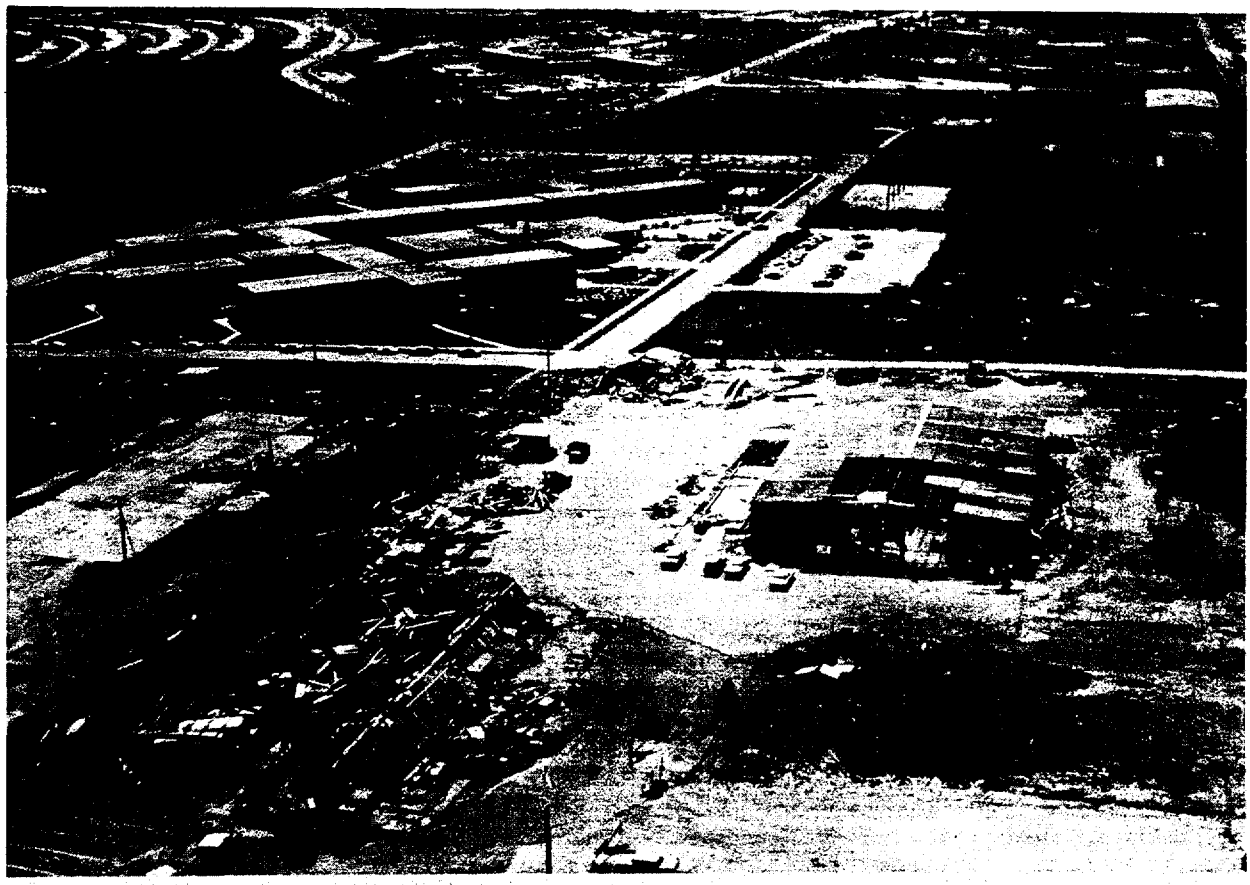




BAROGRAPH TRACE

TYPHOON KAREN

NOVEMBER 1962, GUAM, M. I.



MANY PERMANENT BUILDINGS SUFFERED CONSIDERABLE DAMAGE, AND MOST TEMPORARY STRUCTURES WERE COMPLETELY DESTROYED ON GUAM BY TYPHOON KAREN. (USAF PHOTO)

TYPHOON KAREN LOG
OF
FWC/JTWC GUAM

11 November 1962

0630K Watch relieved by Section A. Typhoon Condition II in effect, and all established requirements for Condition II completed prior to the assumption of this watch. All spaces in FWC/JTWC, except for JTWC research spaces, are manned.

0650K KUAM informed of KAREN's latest position and velocity. Our public advisory indicates that typhoon-force winds will commence between 1500K and 1700K and that eye passage will occur near the northern tip of the island between 2100K and 2300K. This same information is recorded on our public telephone tape.

0800K Typhoon Condition I set in accordance with COMNAVMAR's instructions and all command personnel concerned advised. All officers and enlisted men with telephone communications advised to stay in their quarters if typhoon-proof and to evacuate if quarters not typhoon-proof. Situation report given to CO. Emergency rations ordered and vault area prepared for watch personnel's emergency occupancy.

1000K KUAM advised of present position and intensity of storm. Advice also passed to public concerning action to be taken in event of eye passage over island.

1200K Barracks #2 evacuated. All personnel not retained on watch evacuated to Naval Station Barracks. Security watch posted in Barracks #2. KUAM advised of present position of storm and precautions to take.

1400K KUAM and Guam Daily News advised as above. Telephone tape revised. Pressure shows continuous drop and wind continuing in intensity. All spaces secured properly. Commenced half-hourly radar observations of typhoon eye from FAA radar.

1425K JTWC called FAFWC and transferred Typhoon KAREN warning responsibility to them valid 111200Z for Warning #16. Advised aerial reconnaissance confirmed through 121600Z and staging basis of aircraft. Recon Plans Message 101200Z reconfirmed for all warning details, aircraft mission numbers and cyclone numbers and names.

1440K JTWC called FAFWC to transfer warning responsibility for Tropical Storm JEAN, also, as late data indicated the storm was remaining quasi-stationary in the South China Sea and had not crossed the Viet-Nam coast line. Originally, JTWC would have issued last warning #21 on Tropical Storm JEAN at 110600Z.

1553K JTWC filed Typhoon KAREN Warning #15 and Tropical Storm JEAN Warning #21 with advice that next warnings will be issued by FAFWC, Japan.

1600K KUAM, telephone tape and Guam Daily News brought up-to-date with current situation. Personnel to remain aboard during passage consists of 39 enlisted men and 4 officers. Continuous radar tracking of eye of storm in effect. Public advised that eye passage now apparently will occur in mid-portion of Guam vice northern tip.

1615K Barracks #2 security watch evacuated.

1720K JTWC spaces secured.

1730K Emergency rations broken out and distributed for watch personnel. Pressure shows continuous drop and wind speed increasing. FWC/JTWC handling all weather advisories on island. Andersen AFB weather station evacuated and USWB advised of weather conditions.

1800K Commenced continuous use of emergency power.

1830K Watch not relieved. 39 men and 4 officers (CO, XO, Comm. Officer, and FDO) manning FWC/JTWC until typhoon passes.

1900K KUAM and Guam Daily News given last advisory as to storm's direction, position and intensity. Severe buffeting of north end of building. Duty section shored up north

end of building.

2000K Secured transmission of weather data to Fleet, and Sangley Point has our responsibility. Received last radar position of KAREN. Bears 27 miles 111° from FAA Radar. Severe rattling of overhead in Communications Spaces. Water leakage commencing due to loosening of seams.

2030K Tin on roof commencing to separate. Watch ordered below by FDO and told to abandon equipment. FDO, Communications Officer, and volunteer working party remaining top-side to continue communications and secure as much gear below as possible.

2045K Overhead in Communications Spaces separating from bulkhead. Spaces abandoned by FDO, Communications Officer and working party. Severe water damage occurring in Communications and Supply spaces. Aerovane and mount carried away after indicating gusts over 120 knots and sustained winds of 90+ knots.

2200K Upper spaces checked for fire hazards. ASWEP Charts recovered by FDO. ASWEP interior bulkhead, windows, east side windows and front door carried away.

2215K Eye passage to south apparent by low point reached on Microbarograph, wind shift to east, and speed increase. Pressure 934+ mb. Entire watch section secured inside vault due to severe "pumping" (ears "popping" every 18 seconds) action of 5mb and extreme bowing of bulkheads and overheads. Water damage becoming extreme. Three inches of water over lower deck and water pouring through overhead.

12 November 1962

0000K Entire watch below in vault. Water continuing to rise in all spaces.

0300K Wind speed diminishing. Flashing light contact with COMNAVMAR headquarters established and brief situation report sent to COMNAVMAR in this manner by CO.

0430K Preliminary damage inspection taken. Roof badly

damaged and extreme water damage to both decks.

0500K Received Commander, Naval Forces, Marianas aboard for informal visit.

0510K COMNAVMAR departed.

0630K CO departed. FDO temporarily relieved by Communications Officer.

0730K FDO re-assumed watch. Personnel quartered at the Naval Station returned to Command. Commenced clean-up of water and debris from spaces.

1115K Watch relieved.

DEBRIS FROM WOODEN FRAME HOMES AND QUONSETS WAS STREWN OVER THE ISLAND OF GUAM BY TYPHOON KAREN. (USAF PHOTO)

TYPHOON LUCY - 250000Z NOVEMBER-011800Z DECEMBER 1962

I. DATA

A. Statistics

1. Calendar days of tropical warning - 6 3/4

2. Calendar days of typhoon intensity - 3 1/2

3. Total distance traveled during tropical warning period - 2400 MI

B. Characteristics as a typhoon

1. Min observed SLP - 974mb, 290345Z

2. Min observed 850mb height - 3830 ft, 290345Z

3. Min observed 700mb height - 9340 ft, 290345Z

4. Max vertical development - 30,000 ft, 291200Z

II. DEVELOPMENT

A. Initial impetus - Surge from westerlies into MPT followed by a cut-off low, and then LUCY formed downstream.

B. Initial surface vortex

1. Junction vortex at 220600Z

2. Surface pressure less than 1004mb

3. Maximum surface wind - 10 kts

C. Zenith flow at 200mb

1. Relative position surface vortex - SE quadrant of anticyclone

2. Wind velocity over vortex - 010/25 kts

III. STEERING

A. Prior to recurvature - 500mb

B. During and after recurvature - NA

IV. DISSIPATION

A. Causative factor - Cold air

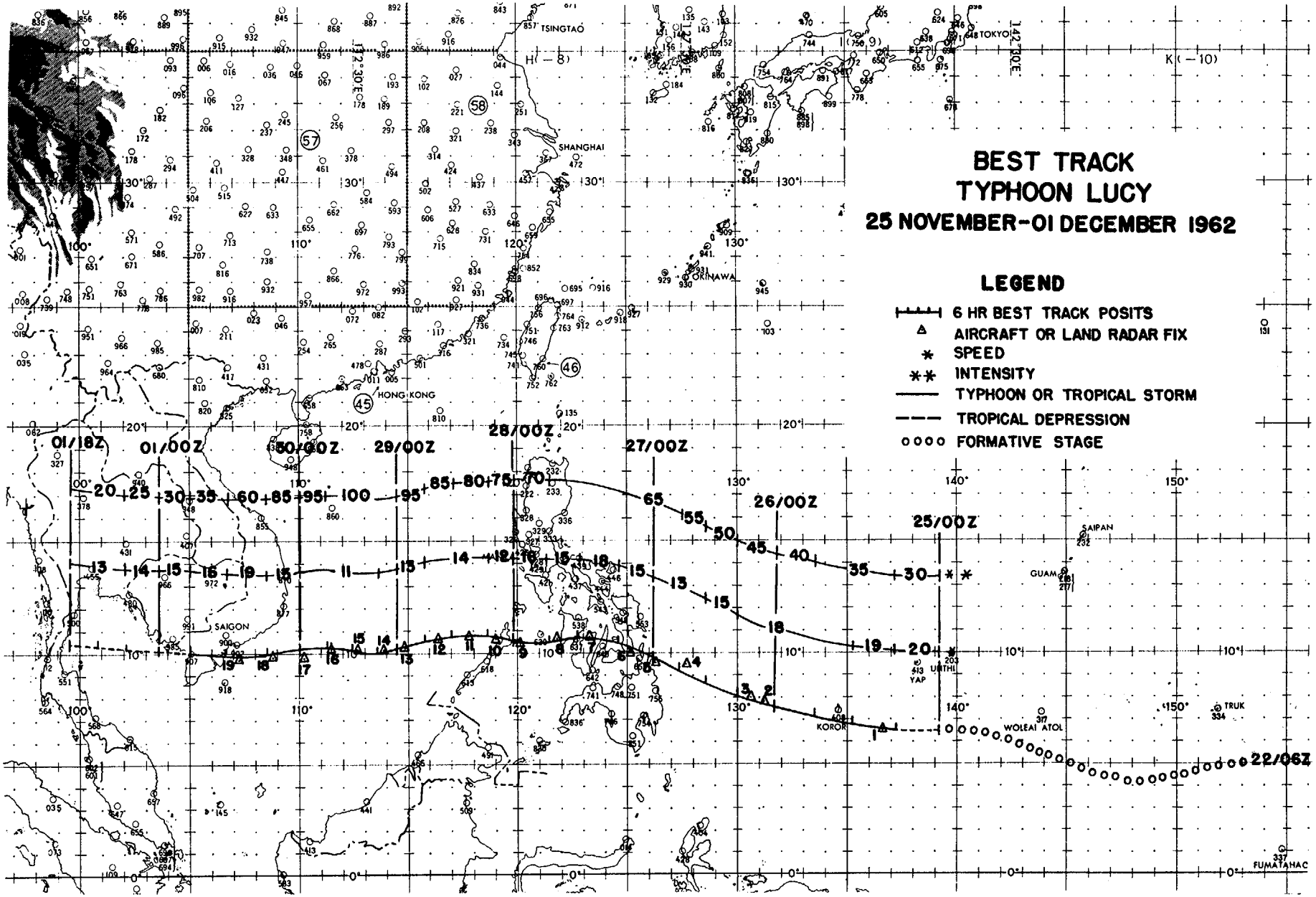
B. Final disposition - Dissipated

V. DAMAGE

A. Total lives lost - 5

B. Total monetary value - $5,000,000

C. Types of property - Crops, homes, roads, bridges, power and communication lines


BEST TRACK
TYPHOON LUCY
25 NOVEMBER-01 DECEMBER 1962
LEGEND
6 HR BEST TRACK POSITS
AIRCRAFT OR LAND RADAR FIX
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
TSINGTAO
SHANGHAI
TOKYO
OKINAWA
HONG KONG
SAIGON
SAIPAN
GUAM
YAP
UNITHI
KOROR
WOLEAI ATOL
TRUK
FUMATAHAC
01/18Z
01/00Z
30/00Z
29/00Z
28/00Z
27/00Z
26/00Z
25/00Z
22/06Z

LAND RADAR AND AIRCRAFT FIXES - TYPHOON LUCY

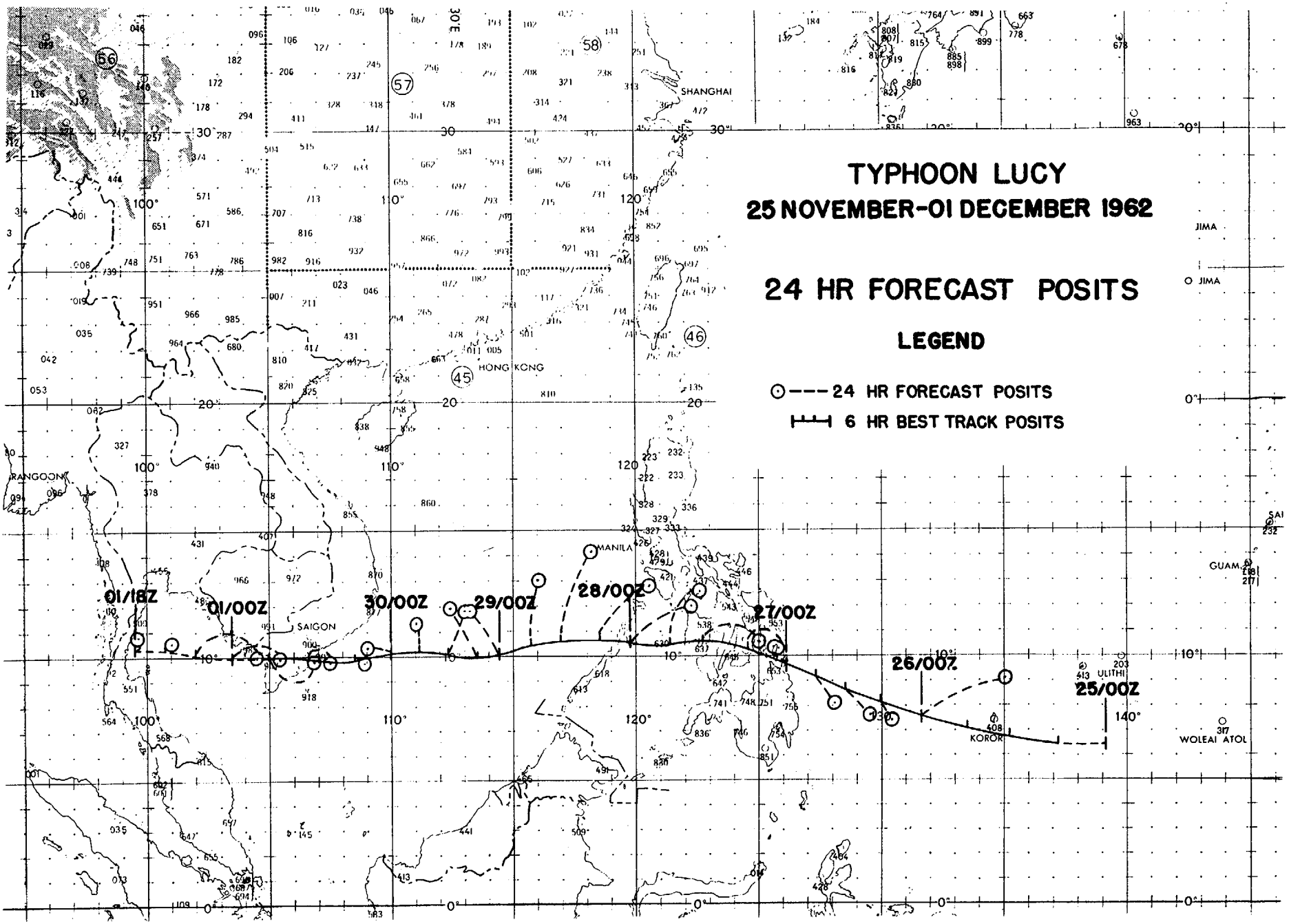
FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/Td (°C)	EYE CHARACTERISTICS
1	250700Z	06.5N	136.7E	VW1-P-20	35	-	-	999	- -	CIRC 100 MI DIA
2	252345Z	07.9N	131.1E	54-P-04	40	-	9930	995	16/15	DIA 30 MI,WELL DEFINED
3	260400Z	08.0N	130.6E	54-P-03	45	40	9910	994	17/14	40 MI N-S & 20 MI E-W
4	261627Z	09.6N	127.7E	VW1-R-02	-	-	-	-	- -	DIA 4 MI, POORLY DEF
5	262320Z	09.6N	126.2E	54-P-03	60	60	9830	990	15/14	DIA 5 MI
6	270345Z	10.0N	125.1E	54-P-02	50	45	9820	990	15/15	CIRC 50 MI DIA,WALL CLDS ALL QUADS
7	271000Z	10.6N	123.4E	VW1-R-04	-	-	-	-	- -	CIRC 32 MI DIA,OPEN E & SE
8	271600Z	10.6N	121.8E	VW1-R-02	-	-	-	-	- -	OVAL 8X18 MI
9	272235Z	10.4N	120.1E	54-P-U	65	70*	18908*	985	-1*/-1*	CIRC 10 MI DIA
10	280350Z	10.6N	119.0E	54-P-02	70	65*	18790*	988	-3*/-3*	CIRC 8 MI DIA
11	281000Z	10.7N	117.8E	VW1-R-01	-	-	-	-	- -	CIRC 16 MI DIA
12	281500Z	10.6N	116.4E	VW1-R-05	-	-	-	-	- -	CIRC 8 MI DIA
13	282200Z	10.3N	114.8E	54-P-01	60	90	9360	974	17/06	CIRC 30 MI DIA
14	290345Z	10.1N	113.9E	54-P-02	80	90	9340	974	17/09	CIRC 40 MI DIA
15	291000Z	10.1N	112.6E	VW1-R-03	-	-	-	-	- -	CIRC 20 MI DIA,OPEN E
16	291545Z	10.2N	111.5E	VW1-R-03	-	-	-	-	- -	CIRC 23 MI DIA,OPEN E
17	292335Z	09.9N	110.2E	54-P-06	90	100	9440	975	19/08	CIRC 40 MI DIA
18	300335Z	09.9N	108.9E	54-P-03	90	95	9620	990	18/07	---
19	301000Z	09.8N	107.2E	VW1-R-02	-	-	-	-	- -	CIRC 25 MI DIA

*500MB DATA

TYPHOON LUCY 25 NOV-01 DEC 1962
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
250000Z	06.5N	139.1E	------	------
250600Z	06.5N	137.1E	------	------
251200Z	06.7N	135.2E	------	------
251800Z	07.1N	133.5E	------	------
260000Z	07.5N	131.7E	------	------
260600Z	08.2N	130.0E	------	------
261200Z	08.7N	128.5E	------	------
261800Z	09.2N	127.3E	------	------
270000Z	09.7N	126.1E	330-52	------
270600Z	10.3N	124.6E	089-82	------
271200Z	10.7N	122.8E	092-135	------
271800Z	10.5N	121.3E	032-156	------
280000Z	10.5N	119.7E	056-177	044-147
280600Z	10.7N	118.5E	044-179	068-217
281200Z	10.7N	117.0E	018-222	069-274
281800Z	10.5N	115.8E	007-160	033-322
290000Z	10.2N	114.5E	328-124	042-357
290600Z	10.0N	113.4E	336-127	030-360
291200Z	10.1N	112.3E	026-118	021-353
291800Z	10.1N	111.1E	360-81	013-240
300000Z	10.0N	110.0E	291-60	319-164
300600Z	09.9N	108.5E	098-27	329-150
301200Z	09.9N	106.5E	092-66	049-192
301800Z	10.0N	105.0E	094-114	060-164
010000Z	10.0N	103.4E	090-122	069-49
010600Z	10.1N	102.0E	094-150	095-170
011200Z	10.3N	100.8E	068-23	094-169
011800Z	10.4N	99.4E	041-28	095-203

AVERAGE 24 HOUR ERROR 110.2 MI
AVERAGE 48 HOUR ERROR 220.7 MI


TYPHOON LUCY
25 NOVEMBER-01 DECEMBER 1962
24 HR FORECAST POSITS
LEGEND
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
01/18Z
01/00Z
30/00Z
29/00Z
28/00Z
27/00Z
26/00Z
25/00Z
SHANGHAI
HONG KONG
MANILA
SAIGON
RANGOON
JIMA
GUAM
ULITHI
KOROR
WOLEAI ATOL