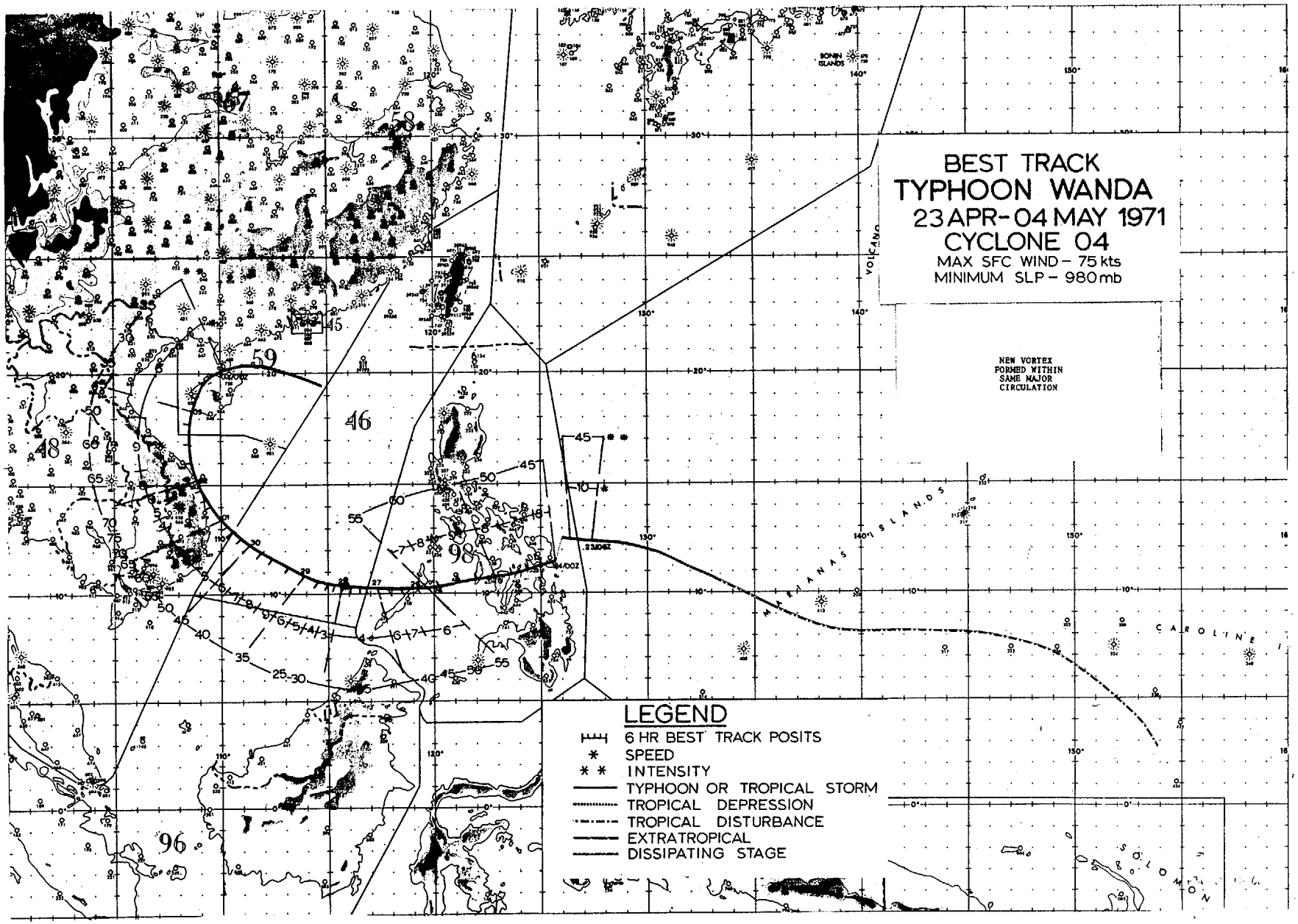
BEST TRACK
TYPHOON WANDA
23 APR-04 MAY 1971
CYCLONE 04
MAX SFC WIND - 75 kts
MINIMUM SLP - 980 mb
NEW VORTEX FORMED WITHIN SAME MAJOR CIRCULATION
LEGEND
6 HR BEST TRACK POSITS
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
BONIN ISLANDS
MARIANAS ISLANDS
CAROLINE
SOLOMON

WANDA

Wanda, followed by Amy and Babe, heralded the greatest outbreak of tropical-storm activity in any spring on record. Her genesis can be traced back as far as the central Carolines on April 15th. Drifting west-northwest for a period of over a week, the diffuse system began to take character and strengthen into a tropical storm on the 23rd, 150 n mi east of Samar in the central Philippines. A new vortex formed south of the original one and Wanda tracked across the island near the Leyte Gulf with winds of 50 to 60 kt. The storm passed over the Visayas and into the Sulu Sea, crossing Palawan Island the afternoon and evening of the 26th.

A peak gust of 84 kt was observed at Tacloban City, however, this may have been due to channeled winds between the islands of Samar and Leyte. The typhoon left 56 dead in the Philippines with 39 reported missing. Damage to public and private property was estimated near 700,000 dollars (U.S.).

Upon entering the South China Sea, Wanda slowed in forward speed to 3-4 kt for a 24-hour period and weakened to a depression (Figure 5-3). At this point the chances for her to regain strength were considered slight. Surprisingly, during the evening of the 29th, Wanda regained her tropical storm status. In the meantime the storm had swung to a northwesterly course as it rounded the southeastern periphery of the subtropical ridge which was extending across the northern South China Sea.

Continuing to intensify, typhoon force was attained less than 60 n mi off the Vietnam coast southeast of Qui Nhon, as Wanda began to recurve in response to a trough in the westerlies coming off the Tibetan Plateau. Reaching a peak intensity of 75 kt, the typhoon paralleled the coastline (Figure 5-4) for 30 hours on May 1st and 2nd, the eye barely touching ashore near Quang Ngai.

Wanda weakened to tropical-storm force upon leaving the Vietnamese coast line and struck Hainan Island on the 3rd with winds of 45 kt. Coming under the influence of the westerlies, the system quickly assumed extratropical characteristics. The remains of the system drifted on an easterly course and dissipated some 36 hours later in the northern South China Sea.

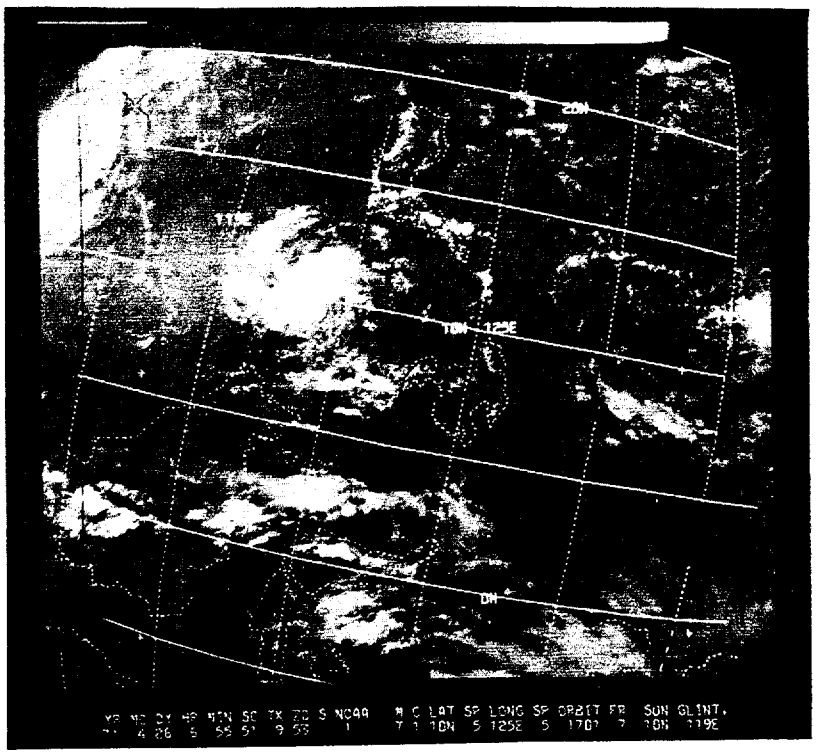

FIGURE 5-3. WANDA AS A MINIMAL TROPICAL STORM WEST OF THE CENTRAL PHILIPPINES ON 26 APRIL.

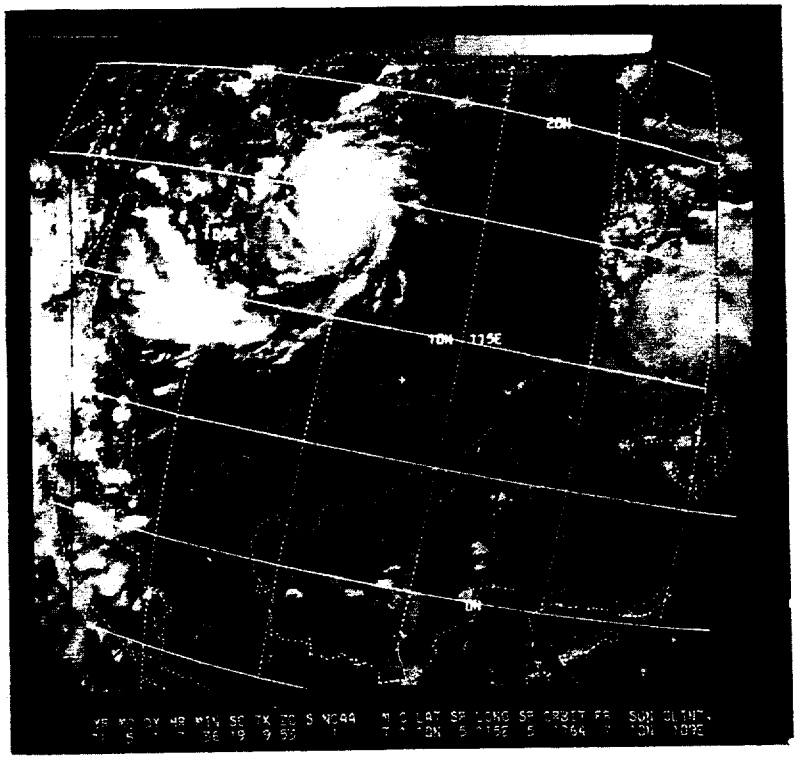

FIGURE 5-4. NOAA-1 VIEW OF TYPHOON WANDA ALONG THE SOUTH VIETNAM COAST ON 1 MAY. DISTURBANCE OVER THE PHILIPPINES IS THE FORMATIVE STAGES OF TROPICAL STORM BABE.

Typhoon Wanda was the first significant storm in more than 20 years to affect the coast of Vietnam during April or May. At Chu Lai maximum winds of 35 kt with gusts to 63 kt were reported. Landing Zone "English" sustained 50-kt winds and gusts were estimated near 70 kt. Maximum rainfall amounts of 7.5 inches and 8.25 inches were reported at Landing Zone "English" and Duc Pho respectively. Over 23 people were killed in the Quang Ngai province and over 10,000 homes and buildings were partly or completely destroyed.

TYPHOON WANDA
EYE FIXES FOR CYCLONE NO. 4
23 APR - 04 MAY 71

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TI/TO	EYE FORM	ORIEN-TATION	EYE DIA	THKN WALL CLD	REMARKS	POSIT OF RADAR
1	230303Z	12.2N 127.9E	54-P- 5---	700MB	40	45	991	2993	12/11	----	-----	--	--	WC FRMG NW QUAD 700 CNTR 14NM SE	
2	230608Z	12.0N 127.8E	SATELIT---	STG H										FIRST SAT BLTN	
3	231010Z	12.4N 126.6E	VQ--- 3---	-----	----	40	----	----	--/--	CIRC		10	5	WC OPEN SE QUAD	12.3N 127.8E
4	231410Z	12.4N 126.1E	VQ-P- 3---	700MB	50	----	993	3060	16/10	ELIP	E-W	16X13	5	WC OPEN SE QUAD	
5	231550Z	12.4N 126.0E	VQ-P- 3---	700MB	34	----	993	3060	15/10	CIRC		8	--	WC OPEN SE QUAD	
6	240100Z	11.2N 125.6E	54-P-10---	500MB	45	----	----	2720	+2/-2	CIRC		12	--	CLOSED WC	
7	240400Z	11.3N 125.3E	54-P- 1---	500MB	50	40	----	----	--/--	CIRC		6	--	CLOSED WC	
8	240702Z	11.5N 125.0E	SATELIT---	STG C+										INTENSIFYING	
9	241017Z	11.1N 124.5E	VQ-R-10---	-----	----	----	----	----	--/--	CIRC		12	--	CLOSED WC	11.4N 125.4E
10	241544Z	11.1N 123.8E	VQ-R-10---	-----	----	----	----	----	--/--	CIRC		19	--	WC OPEN NW QUAD RDR PRES BCMG WKR	11.7N 123.7E
11	242200Z	10.8N 123.2E	54-P- 5---	500MB	50	----	----	----	-1/-3	CIRC		15	--	WC OPEN SE	
12	250335Z	10.6N 122.2E	54-P- 2---	500MB	85	----	----	----	-1/-2	ELIP	E-W	20X13	10	CLOSED WC	
13	250756Z	10.5N 122.0E	SATELIT---	STG X	DIA	3	CAT 2.0								
14	251000Z	10.6N 121.4E	VQ-R- 1---	-----	35	----	----	----	--/10	CIRC		18	10	CLSD WC- RDR PRES GOOD - MDT FB W	9.8N 121.8E
15	251252Z	10.7N 120.9E	VQ-P- 1---	700MB	39	----	991	3078	16/10	ELIP	E-W	18X14	--	CLSD WC	
16	251538Z	10.6N 120.5E	VQ-P- 1---	700MB	50	----	980	3063	17/14	CIRC		20	11	WC OPEN NW QUAD	
17	252200Z	10.2N 120.0E	54-P- 2---	700MB	50	60	989	2999	16/11	CIRC		12	--	WC OPEN NW QUAD	
18	260357Z	10.3N 119.6E	54-P- 1---	500MB	26	50	----	----	-2/-3	----	-----	--	6	RDR PRES POOR	
19	260655Z	10.0N 119.5E	SATELIT---	STG B										WEAKENING	
20	261000Z	10.3N 118.9E	VQ-R-15---	-----	----	----	----	----	--/--	----	-----	--	--	STORM DISORG	9.9N 119.0E
21	261535Z	10.6N 118.1E	VQ-P- 5---	420M	----	40	999	----	26/22	----	-----	25X20	--	WC OPEN E	
22	262200Z	10.2N 117.6E	54-P- 5---	700MB	35	----	993	3060	17/15	CIRC		35	--	WC POORLY DEF	
23	270400Z	10.2N 117.1E	54-P- 5---	700MB	26	30	999	3115	13/11	----	-----	--	--	NO WC	
24	270749Z	12.0N 115.0E	SATELIT---	STG B											
25	270935Z	10.2N 116.8E	VQ-P- 5---	700MB	----	----	----	----	--/--	----	-----	--	--	WIND CNTR 7NM DIA	
26	271555Z	10.2N 116.2E	VQ-P- 5---	700MB	27	----	997	----	14/14	CIRC		14	--	NO WC	
27	272145Z	10.5N 115.9E	54-P- 3---	700MB	----	25	1000	3088	11/09	----	-----	--	--	CNTR DEF BY SC	
28	280653Z	11.5N 115.0E	SATELIT---	STG B											
29	281041Z	10.7N 114.4E	VQ-P- 5---	400M	----	20	1003	----	27/24	----	-----	--	--	THIN FB SPIRALING INTO CNTR	
30	282215Z	10.8N 114.2E	54-P- 5---	400M	35	30	999	----	26/24	----	-----	--	--	RDR PRES POOR	
31	290742Z	12.5N 113.0E	SATELIT---	STG C											
32	291703Z	12.0N 112.1E	VQ-P- 5---	700MB	32	----	999	3109	14/12	----	-----	--	--	WIND EYE 5NM DIA	
33	292215Z	12.1N 111.6E	54-P- 3---	700MB	50	45	1000	3060	12/11	----	-----	--	--	700 CNTR 15NM N	
34	300400Z	12.4N 111.2E	54-P- 3---	700MB	52	50	996	3057	14/11	CIRC		20	10	WC OPEN S SEMIC	
35	300720Z	12.5N 111.0E	VQ-R- 2---	-----	----	----	----	----	--/--	----	-----	15	--	WELL ORGANIZED	12.1N 111.4E
36	300745Z	12.6N 111.0E	VQ-P- 5---	400M	----	45	993	----	26/23	CIRC		15	--	WC OPEN NW QUAD	
37	300819Z	13.0N 111.1E	SATELIT---	STG X	DIA	3	CAT 2.0								
38	301016Z	12.8N 110.8E	VQ-P- 5---	320M	----	35	993	----	26/26	CIRC		25	--	WC OPEN W	
39	301248Z	12.8N 110.6E	VQ-P- 8---	300M	----	45	996	----	26/23	CIRC		25	--	WELL ORGANIZED	
40	301600Z	13.1N 110.5E	54-P- 1---	700MB	50	----	980	2951	14/11	CIRC		35	--	WC OPEN N-SE	
41	301900Z	13.1N 110.4E	54-P- 1---	700MB	50	----	980	2951	14/09	CIRC		35	--	CLSD WC	
42	302200Z	13.2N 110.3E	54-P- 1---	700MB	50	----	982	2923	14/11	CIRC		32	--	CLSD WC	
43	010123Z	13.9N 109.9E	VQ-P- 5---	400M	----	70	985	----	26/22	CIRC		20	14	CLSD WC	
44	010355Z	13.9N 109.7E	VQ-P- 3---	700MB	43	65	987	2993	18/09	CIRC		28	6	WC OPEN SW QUAD	
45	010642Z	14.0N 109.6E	VQ-P- 2---	700MB	77	----	981	2978	19/11	ELIP	N-S	21X16	10	WC TOPS 20K FT	
46	010741Z	14.0N 109.5E	SATELIT---	STG X	DIA	2	CAT 0.5								

TYPHOON WANDA
EYE FIXES FOR CYCLONE NO. 4
23 APR - 04 MAY 71

FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TI/TO	EYE FORM	ORIEN-TATION	EYE DIA	THKN WALL CLD	REMARKS	POSIT OF RADAR
47	011000Z	14.4N 109.5E	54-P- 3---	700MB	50	70	980	2914	17/10	CIRC		20	--	CLSD WC	
48	011300Z	14.5N 109.4E	54----------	700MB	52	----	---*	----	--/--	----	-----	--	--	FIX BSD ON FL WND	
49	011530Z	14.5N 109.4E	----------	-----	----	----	---*	----	--/--	----	-----	--	--	RDR SITE 118NM NW	
50	011855Z	14.8N 109.2E	VQ-R- 8---	-----	----	----	---*	----	--/--	ELIP	E-W	30X22	--	CLSD WC - EYE OVR LND - INTENSE FBS	14.9N 109.7E
51	012217Z	15.1N 108.8E	VQ-R- 8---	-----	----	----	---*	----	--/--	ELIP	SE-NW	44X32	--	CLSD IRREG WC	14.9N 109.7E
52	020047Z	15.4N 108.9E	VQ-R- 5---	-----	----	----	---*	----	--/--	ELIP	NE-SW	27X20	--	CLSD WC	14.7N 109.7E
53	020404Z	15.8N 108.8E	54-P- 1---	700MB	41	65	976	2951	16/12	CIRC		38	--	CLSD WC	
54	020700Z	16.2N 108.8E	54-P- 1---	700MB	52	70	987	2951	16/12	CIRC		30	--	CLSD WC	
55	020835Z	16.0N 109.0E	SATELIT---	STG X	DIA	2.	CAT 3.0								
56	021000Z	16.6N 108.9E	54-P- 1---	700MB	50	65	986	2981	16/12	CIRC		40	--	CLSD WC	
57	021329Z	17.3N 108.9E	VQ-R-10---	-----	27	----	---*	----	--/--	----	-----	--	--	WC OPEN S SEMIC	16.7N 110.3E
58	021600Z	17.6N 108.6E	VQ-R- 3---	500M	26	----	---*	----	--/--	CIRC		32	--	EYE WEAKENING	16.5N 108.9E
59	021920Z	18.0N 108.7E	VQ-R- 4---	800M	29	----	---*	----	--/--	ELIP	E-W	39X25	--	EYE RAGGED	16.6N 108.8E

TYPHOON WANDA

0600Z 23 APR TO 0000Z 4 MAY

	BEST TRACK		WARNING				24 HOUR FORECAST				48 HOUR FORECAST				72 HOUR FORECAST			
					ERRORS				ERRORS				ERRORS				ERRORS	
	POSIT	WIND	POSIT	WIND	DST	WIND	POSIT	WIND	DST	WIND	POSIT	WIND	DST	WIND	POSIT	WIND	DST	WIND
230600Z	12.4N 127.4E	45	12.2N 127.5E	45	13	0	11.5N 124.5E	30	39	-15	--.- ---.-	--	--	--	--.- ---.-	--	--	--
231200Z	12.5N 126.4E	45	12.3N 126.2E	55	17	10	12.3N 122.0E	30	158	-20	12.3N 117.8E	35	223	-25	12.8N 113.8E	50	318	5
240000Z	11.3N 125.8E	45	11.4N 125.6E	45	13	0	12.5N 124.4E	30	134	-25	12.7N 122.4E	30	205	-25	13.1N 119.4E	35	212	0
240600Z	11.2N 125.1E	45	11.7N 125.0E	40	30	-5	11.8N 122.1E	30	66	-25	12.3N 119.1E	35	120	-15	--.- ---.-	--	--	--
241200Z	11.1N 124.4E	50	11.2N 124.3E	35	8	-15	11.2N 121.2E	30	36	-30	11.5N 118.1E	40	77	-5	12.3N 115.2E	50	145	15
241800Z	10.9N 123.7E	50	11.1N 123.5E	35	17	-15	11.2N 120.5E	35	42	-25	11.6N 117.3E	45	85	5	--.- ---.-	--	--	--
250000Z	10.8N 122.9E	55	10.9N 122.9E	40	6	-15	10.7N 119.8E	40	18	-15	10.9N 116.8E	50	51	15	11.4N 113.8E	60	132	25
250600Z	10.7N 122.1E	55	10.8N 121.8E	45	19	-10	10.7N 118.3E	55	58	5	11.1N 115.1E	65	119	30	--.- ---.-	--	--	--
251200Z	10.6N 121.2E	60	10.6N 121.1E	50	6	-10	10.6N 117.8E	60	50	15	11.1N 114.8E	70	116	35	12.0N 111.9E	70	208	45
251800Z	10.5N 120.4E	60	10.6N 120.2E	55	13	-5	10.7N 116.7E	65	74	25	11.4N 113.5E	70	171	35	--.- ---.-	--	--	--
260000Z	10.4N 119.8E	55	10.3N 119.8E	60	6	5	10.4N 116.5E	65	49	30	11.2N 113.4E	70	149	35	12.7N 110.5E	70	234	35
260600Z	10.3N 119.2E	50	10.3N 119.1E	55	6	5	10.4N 116.3E	65	37	30	11.3N 113.2E	70	143	40	--.- ---.-	--	--	--
261200Z	10.3N 118.6E	45	10.4N 118.5E	50	8	5	10.5N 115.7E	60	54	25	11.4N 113.0E	65	134	40	12.7N 110.5E	65	129	25
261800Z	10.3N 117.9E	40	10.5N 117.8E	50	13	10	11.0N 115.0E	60	82	25	11.9N 112.4E	65	147	30	--.- ---.-	--	--	--
270000Z	10.2N 117.3E	35	10.3N 117.2E	50	8	15	10.5N 114.4E	60	82	25	11.4N 111.8E	65	134	30	12.8N 109.4E	65	120	20
270600Z	10.2N 116.9E	35	10.2N 116.9E	35	0	0	--.- ---.-	--	--	--	--.- ---.-	--	--	--	--.- ---.-	--	--	--
271200Z	10.3N 116.6E	35	10.1N 117.2E	30	37	-5	10.3N 116.8E	30	101	5	--.- ---.-	--	--	--	--.- ---.-	--	--	--
271800Z	10.3N 116.2E	35	10.0N 116.0E	30	21	-5	10.3N 114.8E	30	27	-5	--.- ---.-	--	--	--	--.- ---.-	--	--	--
280000Z	10.4N 115.8E	35	10.4N 115.7E	30	6	-5	11.3N 113.8E	30	32	-5	--.- ---.-	--	--	--	--.- ---.-	--	--	--
280600Z	10.5N 115.5E	30	10.7N 115.1E	30	26	0	11.9N 113.1E	30	42	-5	--.- ---.-	--	--	--	--.- ---.-	--	--	--
281200Z	10.5N 115.1E	25	10.7N 114.3E	25	48	0	11.2N 111.8E	25	42	-15	--.- ---.-	--	--	--	--.- ---.-	--	--	--
281800Z	10.7N 114.6E	35	--.- ---.-	--	--	--	--.- ---.-	--	--	--	--.- ---.-	--	--	--	--.- ---.-	--	--	--
290000Z	10.8N 114.0E	35	--.- ---.-	--	--	--	--.- ---.-	--	--	--	--.- ---.-	--	--	--	--.- ---.-	--	--	--
290600Z	11.2N 113.2E	35	--.- ---.-	--	--	--	--.- ---.-	--	--	--	--.- ---.-	--	--	--	--.- ---.-	--	--	--
291200Z	11.6N 112.4E	40	11.7N 112.1E	40	19	0	13.0N 110.0E	40	42	-15	14.7N 107.6E	30	106	-45	--.- ---.-	--	--	--
291800Z	11.9N 111.9E	40	12.0N 111.9E	40	6	0	13.3N 109.9E	40	31	-20	14.7N 107.9E	30	75	-40	--.- ---.-	--	--	--
300000Z	12.3N 111.4E	45	12.2N 111.5E	45	8	0	13.6N 109.4E	50	42	-15	15.0N 107.5E	30	87	-40	--.- ---.-	--	--	--
300600Z	12.6N 111.0E	50	12.5N 111.1E	50	8	0	13.8N 109.3E	55	21	-15	15.2N 107.3E	30	99	-35	--.- ---.-	--	--	--
301200Z	12.8N 110.7E	55	12.8N 110.6E	55	6	0	14.2N 108.9E	50	31	-25	--.- ---.-	--	--	--	--.- ---.-	--	--	--
301800Z	13.1N 110.4E	60	13.1N 110.3E	55	6	-5	14.4N 108.7E	40	37	-30	--.- ---.-	--	--	--	--.- ---.-	--	--	--
010000Z	13.4N 110.1E	65	13.4N 110.1E	70	0	5	17.8N 109.6E	70	159	0	22.2N 113.9E	50	365	5	--.- ---.-	--	--	--
010600Z	14.0N 109.6E	70	14.2N 109.6E	70	12	0	17.9N 109.1E	70	115	5	22.0N 112.0E	45	254	10	--.- ---.-	--	--	--
011200Z	14.4N 109.4E	75	14.5N 109.4E	70	6	-5	16.9N 108.9E	70	6	10	20.5N 110.6E	45	103	15	--.- ---.-	--	--	--
011800Z	14.8N 109.2E	70	14.7N 109.3E	70	8	0	16.8N 108.9E	70	61	20	20.1N 110.2E	45	36	20	--.- ---.-	--	--	--
020000Z	15.2N 109.0E	70	15.3N 108.8E	65	13	-5	17.4N 108.2E	65	69	20	20.9N 110.0E	45	42	20	--.- ---.-	--	--	--
020600Z	16.0N 108.8E	65	16.0N 108.6E	65	11	0	19.0N 108.6E	60	18	25	--.- ---.-	--	--	--	--.- ---.-	--	--	--
021200Z	16.9N 108.8E	60	16.9N 108.9E	65	6	5	20.0N 110.8E	45	100	15	--.- ---.-	--	--	--	--.- ---.-	--	--	--
021800Z	17.8N 108.7E	50	17.9N 108.6E	60	8	10	22.0N 110.2E	30	130	5	--.- ---.-	--	--	--	--.- ---.-	--	--	--
030000Z	18.4N 108.8E	45	18.8N 108.7E	55	25	10	22.9N 111.1E	25	171	0	--.- ---.-	--	--	--	--.- ---.-	--	--	--
030600Z	18.9N 108.9E	35	19.6N 109.9E	45	70	10	--.- ---.-	--	--	--	--.- ---.-	--	--	--	--.- ---.-	--	--	--
031200Z	19.5N 109.1E	30	19.9N 110.1E	40	61	10	--.- ---.-	--	--	--	--.- ---.-	--	--	--	--.- ---.-	--	--	--
031800Z	19.9N 109.6E	25	19.9N 109.5E	30	6	5	--.- ---.-	--	--	--	--.- ---.-	--	--	--	--.- ---.-	--	--	--
040000Z	20.2N 110.1E	25	20.6N 109.9E	25	26	0	--.- ---.-	--	--	--	--.- ---.-	--	--	--	--.- ---.-	--	--	--

	TYPHOONS WHILE WIND OVER 35KTS				ALL FORECASTS			
	WARNING	24-HR	48-HR	72-HR	WARNING	24-HR	48-HR	72-HR
AVERAGE FORECAST ERROR	13NM	59NM	145NM	184NM	16NM	67NM	134NM	187NM
AVERAGE RIGHT ANGLE ERROR	8NM	30NM	81NM	70NM	8NM	36NM	68NM	62NM
AVERAGE MAGNITUDE OF WIND ERROR	6KTS	18KTS	25KTS	18KTS	5KTS	17KTS	26KTS	21KTS
AVERAGE BIAS OF WIND ERROR	-0KTS	-2KTS	-1KTS	18KTS	0KTS	-1KTS	5KTS	21KTS
NUMBER OF FORECASTS	35	32	19	7	40	36	24	8