ELAINE

Elaine became the second storm to reach typhoon force in the South China Sea within a week. A circulation was detected in the equatorial trough near Woleai Atoll in the central Carolines on the 28th. By the 30th, signs of development began to appear in satellite pictures as the disturbance passed south of the Palau Islands. Subsequent aircraft investigation of the system revealed the pre-Elaine system was still of depression status two days later. However, the circulation did develop to minimal tropical-storm strength shortly before she skirted the northern coast of Samar Island the evening of the 3rd (Figure 5-49).

Crossing the central Philippines at a 13-kt forward speed, Elaine exited south of Lubang Island 24 hours later. Extensive crop damage was reported to have been caused during the typhoon's transit of the islands. Maximum winds of 50 kt were registered at the Virac station on Catanduanes Island, while up to 7.8 inches of rainfall was recorded at Calapan on Mindoro. Calapan also measured the lowest pressure at 981.8 mb.

As an extension of a quasi-stationary trough in the Sea of Japan began to erode the subtropical ridge over South China, Elaine began to slow and stall west of Luzon. As the weak steering currents persisted, the storm drifted in a general northwestward direction at 4 kt and intensified to 100 kt (Figure 5-50). By the 7th, the ridge began to rebuild and Elaine swung back to a westerly track skirting southern Hainan early on October 9th. Dropping to tropical-storm status, Elaine traversed the Gulf of Tonkin, driving ashore on the Vietnamese coast north of Dong Hoi. She very quickly weakened and later dissipated completely over Laos.

During the time frame when Elaine stalled in the South China Sea, the envelope of gale force winds expanded in size to 300 n mi in radius with 50-kt winds extending 200 n mi in the southern quadrant. An extensive westerly fetch existing for several days caused huge waves to strike the western coastal region of the northern Philippines. Close to 10,000 persons had to be evacuated from the shore areas. Destruction due to the heavy seas amounted to 2,400 homes completely demolished.

The heavy seas were also responsible for a number of maritime casualties. The Philippine inter-island passenger ship MV TACLOBAN was sunk in the Tablas Straits with three persons reported killed. The pump boat SARANEL was capsized by big waves off the coast of Siguigas Island in the

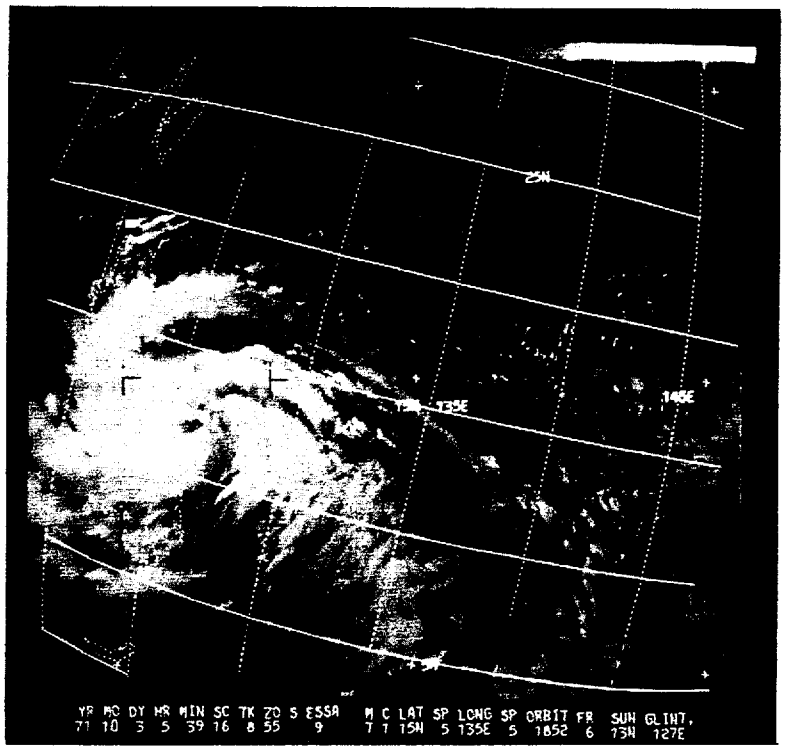


FIGURE 5-49. ELAINE ON 3 OCTOBER, VIEWED BY ESSA-9 AS THE TROPICAL STORM STRUCK SAMAR ISLAND IN THE CENTRAL PHILIPPINES.

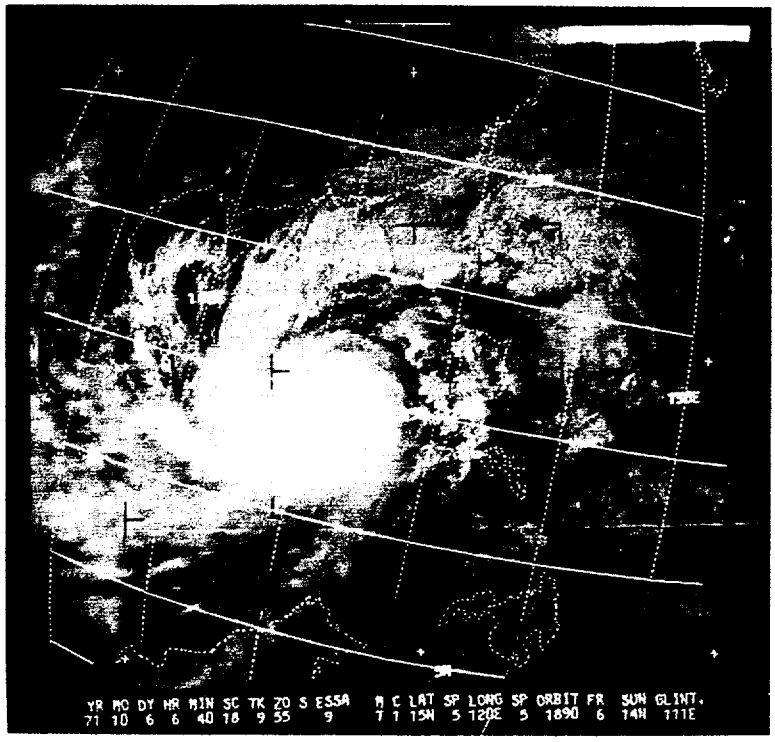


FIGURE 5-50. ESSA-9 PHOTO OF TYPHOON ELAINE ON 6 OCTOBER DURING HER QUASI-STATIONARY PERIOD WEST OF LUZON.

Mindano Sea with only four of its thirty passengers surviving. Immobilized south of the typhoon, the American ship STEEL VENDOR was run aground on the Loaita Bank in the South China Sea. In another incident, the sinking Panamanian tanker MV KEELUNG, some 240 n mi west of Manila, had to be abandoned by its crew in the heavy seas generated by Elaine.

TYPHOON ELAINE
EYE FIXES FOR CYCLONE NO. 33
03 OCT - 09 OCT 71

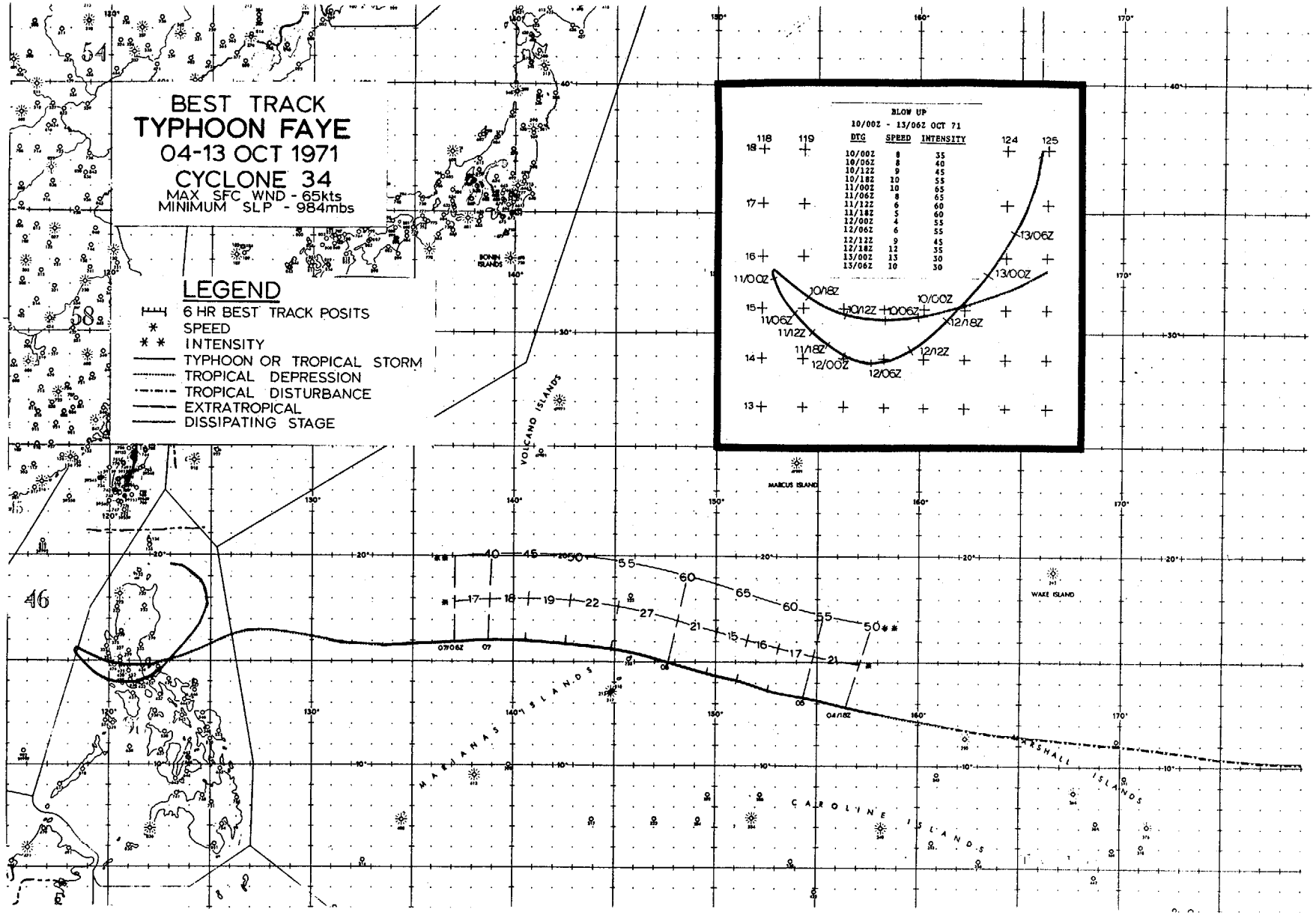
FIX NO.	TIME	POSIT	UNIT-METHOD -ACCY	FLT LVL	FLT LVL WND	OBS SFC WND	OBS MIN SLP	MIN 700MB HGT	FLT LVL TI/TO	EYE FORM	ORIEN-TATION	EYE DIA	THKN WALL CLD	REMARKS	POSIT OF RADAR
1	300630Z	7.0N 135.0E	SATELIT---	STG B										FIRST BLTN	
2	010537Z	11.0N 134.0E	SATELIT---	STG B										LITTLE CHG	
3	020632Z	11.0N 130.0E	SATELIT---	STG B											
4	030539Z	12.0N 126.0E	SATELIT---	STG C+										STRONGER	
5	031402Z	12.0N 124.4E	VQ-P- 2-18	700MB	----	----	993	3023	16/12	----	-----	--	--	RDR PRES V POOR	
6	031557Z	12.8N 124.3E	VQ-P- 3-12	700MB	----	----	993	3039	14/11	----	-----	--	--	RDR PRES POOR	
7	032200Z	13.0N 122.7E	54-P- 2-10	500MB	44	----	981	----	-6/-7	----	-----	--	--	NO RDR PRES	
8	040300Z	13.1N 121.3E	54-P- 4---	500MB	50	----	985	----	-4/-7	----	-----	--	--	NO RDR PRES	
9	040637Z	13.0N 121.0E	SATELIT---	STG X	DIA	5	CAT 2.0							NO EYE VISIBLE	
10	041015Z	12.9N 120.2E	54-P- 2-10	500MB	18	----	----	----	-7/-8	----	-----	--	--	POOR RDR PRES	
11	041614Z	14.5N 119.5E	54-P- 3-15	500MB	40	----	991	----	-6/-6	----	-----	--	--	POOR RDR PRES	
12	042213Z	15.2N 117.9E	VQ-R-15---	-----	----	----	----	----	--/--	CIRC		14	--	OPEN E SEMIC	16.2N 117.5E
13	050358Z	14.5N 116.9E	VQ-P-10---	-----	----	45	980	----	26/25	CIRC		14	--	OPEN N AND S	
14	050737Z	14.5N 116.0E	SATELIT---	STG X	DIA	4	CAT 2.0								
15	051000Z	14.4N 116.4E	54-P- 2- 2	700MB	45	50	963	2896	15/14	CIRC		10	--	OPEN NW-NE-700 CNTR 5NM SW	
16	051540Z	14.4N 116.7E	54-P- 2- 3	700MB	70	----	975	2896	18/17	CIRC		10	--	PORTION OF WC TO	
17	052205Z	15.0N 115.9E	54-P- 2- 3	700MB	40	75	969	2829	18/17	CIRC		18	--	POOR RDR PRES-700 CNTR 5NM SE	
18	060100Z	15.1N 116.0E	54-P- 3- 4	700MB	55	85	974	2841	17/15	CIRC		18	--	CLSD WC	
19	060404Z	15.1N 116.1E	54-P- 2- 3	700MB	72	120	968	2838	16/14	CIRC		20	--	WC OPEN N	
20	060640Z	15.8N 116.0E	SATELIT---	STG X	DIA	5	CAT 3.0							FAINT EYE VISIBLE	
21	060850Z	14.8N 116.4E	VQ-P- 3-15	-----	----	105	----	----	26/21	CIRC		35	--	RDR PRES CONFUSED	
22	061000Z	15.4N 115.9E	VQ-P-10- 1	700MB	----	----	977	2886	18/13	CIRC		10	--	NO WC	
23	061204Z	15.3N 116.2E	VQ-R-10---	-----	----	----	----	----	--/--	CIRC		10	--	OPEN N	16.5N 117.0E
24	061620Z	16.0N 115.4E	54-P- 2- 3	700MB	75	----	960	2771	18/15	ELIP	SE-NW	50X30	--	OPEN SE-700 CNTR 4NM N	
25	061830Z	16.2N 115.4E	54-P- 2- 4	700MB	80	----	964	2777	16/14	ELIP	SE-NW	50X30	--	FAIR RDR PRES	
26	062330Z	16.4N 115.6E	54-P- 2- 2	700MB	85	100	957	2789	16/13	CIRC		60	--	WC DSPTG-700 CNTR 14NM W	
27	070130Z	16.3N 115.2E	54-P- 5-15	700MB	40	85	963	2774	16/15	CIRC		20	--	CLSD WC-700 CNTR 12NM NW	
28	070400Z	16.5N 115.3E	54-P- 4---	700MB	47	90	964	2786	19/17	CIRC		15	--	WC OPEN SE-700 CNTR 9NM W	
29	070739Z	17.0N 115.0E	SATELIT---	STG X	DIA	5	CAT 3.5							LITTLE CHANGE	
30	071043Z	17.2N 114.6E	VQ-P-10---	700MB	----	----	967	2847	--/--	----	-----	--	--	V POOR RDR PRES 2ND CNTR 42NM SE	
31	071300Z	17.0N 114.6E	VQ-R-20---	-----	----	----	----	----	--/--	----	-----	--	--	WELL ORGANIZED	18.2N 114.8E
32	071557Z	17.3N 113.4E	VQ-P-10---	700MB	----	----	966	2829	18/13	CIRC		40	--	HOLE IN RDR RETRN	
33	072230Z	17.2N 112.5E	54-P- 8-15	700MB	80	----	----	2810	18/16	----	-----	--	--	POOR FIX	
34	080345Z	16.8N 110.9E	54-P-10-14	700MB	80	65	----	----	14/11	----	-----	--	--	POOR FIX	
35	080642Z	18.0N 110.5E	SATELIT---	STG X	DIA	4	CAT 3.0							WEAKER	
36	080645Z	17.7N 110.5E	LND RDR---							----	-----	--	--	DANANG RDR	16.0N 108.2E
37	081215Z	17.9N 109.9E	LND RDR---							----	-----	--	--	DANANG RDR	16.0N 108.2E
38	081315Z	17.8N 109.8E	LND RDR---							----	-----	--	--	DANANG RDR	16.0N 108.2E
39	081415Z	17.9N 109.6E	LND RDR---							----	-----	--	--	DANANG RDR	16.0N 108.2E
40	081445Z	17.8N 109.5E	LND RDR---							----	-----	--	--	DANANG RDR	16.0N 108.2E
41	090740Z	18.0N 107.0E	SATELIT---	STG C+											

TYPHOON ELAINE

0600Z 3 OCT TO 1200Z 9 OCT

	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
030600Z	12.1N 125.7E	40	11.7N 124.4E	30	80	-10	13.6N 119.9E	40	68	5	--.- --.-.-	--	--	--	--.- ---.-	--	--	--
031200Z	12.6N 124.7E	40	12.8N 124.5E	45	17	5	14.8N 120.5E	50	64	10	16.5N 116.3E	70	120	20	18.1N 112.0E	75	259	-15
031800Z	12.9N 123.6E	35	12.9N 124.0E	45	23	10	14.8N 120.4E	50	81	10	16.5N 116.2E	70	97	5	--.- ---.-	--	--	--
040000Z	13.1N 122.3E	35	13.4N 122.5E	45	21	10	15.2N 117.4E	70	25	25	16.2N 113.5E	75	158	0	16.9N 109.5E	70	339	-30
040600Z	13.2N 121.0E	35	13.1N 120.5E	55	30	20	14.6N 114.9E	75	105	30	15.8N 110.6E	70	312	-15	--.- ---.-	--	--	--
041200Z	13.9N 119.9E	40	13.0N 119.9E	60	54	20	14.6N 115.2E	80	52	30	15.8N 110.9E	75	276	-15	16.8N 106.9E	50	412	-40
041800Z	14.8N 119.0E	40	14.4N 119.8E	60	52	20	16.3N 114.7E	80	108	15	17.4N 110.0E	75	327	-20	--.- ---.-	--	--	--
050000Z	14.9N 117.7E	45	15.2N 117.9E	65	21	20	16.8N 112.9E	80	205	5	17.5N 108.4E	70	405	-30	19.0N 104.7E	40	415	-40
050600Z	14.4N 116.7E	45	14.8N 116.5E	65	27	20	16.3N 112.0E	75	238	-10	17.4N 108.1E	70	408	-25	--.- ---.-	--	--	--
051200Z	14.5N 116.1E	50	14.7N 116.0E	60	13	10	16.0N 111.6E	60	237	-30	17.4N 107.8E	55	359	-35	19.2N 104.5E	35	305	-30
051800Z	14.9N 115.9E	65	14.5N 116.7E	60	52	-5	15.4N 113.5E	60	119	-35	16.5N 110.4E	55	157	-30	--.- ---.-	--	--	--
060000Z	15.1N 116.0E	75	15.0N 116.0E	85	6	10	15.2N 115.0E	100	75	0	16.0N 111.8E	95	102	15	17.0N 108.7E	80	79	30
060600Z	15.3N 116.0E	85	15.1N 116.1E	105	13	20	15.3N 114.8E	105	87	10	16.0N 111.5E	95	115	20	--.- ---.-	--	--	--
061200Z	15.6N 115.7E	90	15.4N 115.8E	105	13	15	15.7N 113.8E	100	97	10	16.4N 110.6E	90	103	25	17.5N 107.5E	80	69	40
061800Z	15.9N 115.5E	95	16.0N 115.2E	100	18	5	16.5N 112.4E	95	72	10	17.4N 109.3E	85	45	30	--.- ---.-	--	--	--
070000Z	16.4N 115.4E	100	16.4N 115.4E	100	0	0	17.3N 114.2E	80	133	0	18.6N 112.7E	70	280	20	--.- ---.-	--	--	--
070600Z	16.7N 115.2E	95	16.6N 115.1E	95	8	0	17.8N 113.7E	85	165	10	19.1N 112.2E	75	296	30	--.- ---.-	--	--	--
071200Z	17.3N 114.1E	90	17.0N 114.8E	95	44	5	18.2N 113.2E	85	200	20	19.4N 111.6E	75	306	35	--.- ---.-	--	--	--
071800Z	17.6N 112.9E	85	17.4N 113.1E	90	17	5	18.4N 109.0E	70	34	15	--.- --.-.-	--	--	--	--.- ---.-	--	--	--
080000Z	17.7N 111.9E	80	17.4N 112.0E	85	19	5	17.8N 107.9E	65	13	15	--.- --.-.-	--	--	--	--.- ---.-	--	--	--
080600Z	17.8N 110.8E	75	17.7N 110.7E	80	8	5	18.5N 106.6E	60	41	15	--.- --.-.-	--	--	--	--.- ---.-	--	--	--
081200Z	17.9N 109.7E	65	17.9N 109.7E	75	0	10	18.7N 105.7E	50	58	10	--.- --.-.-	--	--	--	--.- ---.-	--	--	--
081800Z	17.9N 108.7E	55	17.9N 108.8E	70	6	15	--.- --.-.-	--	--	--	--.- --.-.-	--	--	--	--.- ---.-	--	--	--
090000Z	18.0N 107.8E	50	18.0N 107.8E	65	0	15	--.- --.-.-	--	--	--	--.- --.-.-	--	--	--	--.- ---.-	--	--	--
090600Z	18.0N 107.1E	45	18.1N 106.8E	55	18	10	--.- --.-.-	--	--	--	--.- --.-.-	--	--	--	--.- ---.-	--	--	--
091200Z	18.0N 106.4E	40	18.2N 106.2E	45	16	5	--.- --.-.-	--	--	--	--.- --.-.-	--	--	--	--.- ---.-	--	--	--

	TYPHOONS WHILE WIND OVER 35KTS				ALL FORECASTS			
	WARNING	24-HR	48-HR	72-HR	WARNING	24-HR	48-HR	72-HR
AVERAGE FORECAST ERROR	22NM	103NM	227NM	268NM	22NM	103NM	227NM	268NM
AVERAGE RIGHT ANGLE ERROR	13NM	63NM	70NM	69NM	13NM	63NM	70NM	69NM
AVERAGE MAGNITUDE OF WIND ERROR	11KTS	15KTS	22KTS	32KTS	11KTS	15KTS	22KTS	32KTS
AVERAGE BIAS OF WIND ERROR	9KTS	8KTS	2KTS	-12KTS	9KTS	8KTS	2KTS	-12KTS
NUMBER OF FORECASTS	26	22	17	7	26	22	17	7


BEST TRACK
TYPHOON FAYE
04-13 OCT 1971
CYCLONE 34
MAX SFC WND - 65kts
MINIMUM SLP - 984mbs
LEGEND
6 HR BEST TRACK POSITS
SPEED
INTENSITY
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
BLOW UP
10/00Z - 13/06Z OCT 71
DTG SPEED INTENSITY
10/00Z 8 35
10/06Z 8 40
10/12Z 9 45
10/18Z 10 55
11/00Z 10 65
11/06Z 8 65
11/12Z 6 60
11/18Z 5 60
12/00Z 4 55
12/06Z 6 55
12/12Z 9 45
12/18Z 12 55
13/00Z 13 30
13/06Z 10 30
VOLCANO ISLANDS
MARCUS ISLAND
WAKE ISLAND
MARIANAS ISLANDS
CAROLINE ISLANDS
MARSHALL ISLANDS