6. TROPICAL CYCLONE WARNING VERIFICATION STATISTICS

6.1 GENERAL

Due to the rapid growth of micro-computers in the meteorological community and to save publishing costs, tropical cyclone track data (with best track, initial warning, 12-, 24-, 36-, 48-, and 72-hour JTWC forecasts) and fix data (satellite, aircraft, radar and synoptic) are now available as computer files separately upon request. Best track positions that precede the first warning or that succeed the final warning are not printed in this chapter, but are available on floppy diskettes upon request. The data will be in ASCII format on 5.25 inch "floppy" or 3.5 inch diskettes, and will fill two diskettes (or one high density diskette). These data include the western North Pacific Ocean (1 January - 31 December 1993) on one and North Indian Ocean (1 January - 31 December 1993), and western South Pacific and South Indian Oceans (1 July 1992 - 30 June 1993) on the other. Agencies or individuals desiring these data sets should send the appropriate number of diskettes to NAVPACMETOCCEN WEST/JTWC Guam with their request. When the request and your diskettes are received, the data will be copied onto your diskettes and returned with an explanation of the data formats.

6.2 WARNING VERIFICATION STATISTICS

6.2.1 WESTERN NORTH PACIFIC

This section includes verification statistics for each JTWC tropical cyclone warning in the western North Pacific Ocean during 1993.

JTWC FORECAST TRACK AND INTENSITY ERRORS BY WARNING

TROPICAL DEPRESSION 01W

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93030100	1	8.4N	127.7E	25	11	97	69				0	5	5			
93030106	2	8.3N	125.8E	25	11	5					5	10				
93030112	3	8.0N	124.2E	20	34	110					0	5				
93030118	4	7.6N	123.5E	20	5						0					
93030200	5	7.0N	122.8E	20	42						0					
			AVERAGE		21	71	69				1	7	5			
			# CASES		5	3	1				5	3	1			

TROPICAL STORM IRMA (02W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93031000	1	5.3N	163.9E	30	59	118	169	232	356	304	0	0	5	5	10	-5
93031006	2	5.3N	163.7E	30	34	43	60	146	176	13	0	5	5	5	10	-10
93031012	3	5.3N	163.5E	30	18	21	54	128	80	185	0	5	5	5	5	-15
93031018	4	5.2N	163.2E	25	8	25	96	129	134	192	0	0	5	5	0	-20
93031100	5	5.2N	163.0E	25	18	48	99	59	26	332	0	0	0	-5	-10	-25
93031106*	6	5.1N	162.8E	25	16	81	93	72			0	0	0	-10		
93031118*	7	4.1N	162.5E	25	24	43	8	123			5	0	-5	-15		
93031206*	8	4.4N	162.3E	25	18	47	163	324			5	-5	-15	-25		
93031218	9	5.2N	161.1E	35	46	190	377	481	526	535	0	-10	-15	-10	-10	0
93031300	10	5.9N	160.2E	40	13	139	229	250	262	264	-5	-15	-15	-15	-5	0
93031306	11	7.4N	158.6E	45	29	134	179	179	181	285	-10	-15	-15	-10	-5	0
93031312	12	9.0N	157.0E	50	5	58	92	118	147	320	-5	0	10	20	20	25

* TD Warning Issued

TROPICAL STORM IRMA (02W) (CONTINUED)

93031318	13	10.3N	155.6E	55	56	82	83	96	161	383	-5	5	10	20	10	20
93031400	14	11.3N	154.4E	55	32	46	67	36	188	523	-10	-10	-5	-15	-20	0
93031406	15	11.9N	153.2E	55	8	53	50	152	305	600	-10	-10	-10	-15	-20	5
93031412	16	12.2N	152.2E	55	8	42	107	243	392		-10	-5	-15	-20	-10	
93031418	17	12.5N	151.2E	55	8	33	148	303	455		-10	-10	-15	-10	5	
93031500	18	12.9N	150.3E	50	17	116	266	433	563		0	-5	-5	5	15	
93031506	19	13.5N	149.7E	50	29	117	225	314	389		0	-5	-5	5	20	
93031512	20	14.3N	149.5E	55	30	94	195	210			0	0	5	10		
93031518	21	15.1N	149.6E	55	35	133	213	342			0	0	10	15		
93031600	22	15.8N	149.8E	55	42	173	392				5	5	10			
93031606	23	16.5N	150.2E	55	70	247	484				0	5	10			
93031612	24	17.0N	150.6E	50	54	186					0	5				
93031618	25	17.3N	151.0E	45	87	204					0	10				
93031700	26	17.5N	151.4E	40	6						0					
93031706	27	17.7N	151.8E	35	8						0					
			AVERAGE		29	99	168	209	272	328	3	5	8	12	11	10
			# CASES		27	25	23	21	16	12	27	25	23	21	16	12

TROPICAL DEPRESSION 03W

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93041218	1	6.7N	128.0E	25	30	13	8	21			0	0	5	10		
93041300	2	6.6N	127.2E	25	26	8	21				0	5	5			
93041306	3	6.4N	126.5E	25	13	12	21				0	5	5			
93041312*	4	6.4N	125.8E	20	12	18					0	0				
93041400	5	6.4N	124.3E	20	11						0					
			AVERAGE		19	13	17	22			0	3	5	10		
			# CASES		5	4	3	1			5	4	3	1		

* TD Warning Issued

TROPICAL DEPRESSION 04W

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93042006	1	9.8N	152.3E	25	25	93	189	280	358	523	0	5	10	15	20	20
93042012	2	9.6N	151.3E	25	8	84	163	224	290	390	0	5	10	15	15	20
93042018	3	9.1N	150.4E	25	41	118	199	249	305	370	0	5	10	15	15	20
93042100	4	8.5N	149.7E	25	11	41	72	108	140	160	5	5	10	5	10	15
93042106	5	8.0N	149.0E	25	6	48	78	102	123	124	5	5	10	5	10	15
93042112	6	7.5N	148.4E	25	8	37	70	107	132	160	0	5	0	0	5	5
93042118	7	7.2N	147.7E	25	24	66	108	150	180	191	0	5	0	0	5	5
93042200	8	6.9N	146.9E	25	24	60	80	91	85	67	0	0	0	0	5	5
93042206	9	6.6N	146.0E	25	77	119	169	202	198	175	0	-5	0	0	0	5
93042212	10	6.3N	145.2E	30	101	147	177	184	178	200	-5	-5	-5	0	0	5
93042218	11	6.1N	144.3E	30	118	169	207	203	196	195	-5	-5	0	0	5	15
93042300	12	5.9N	143.3E	30	29	30	21	32	45	92	-5	-5	0	0	5	15
93042306	13	5.8N	142.3E	30	13	18	18	48	35	72	0	5	10	10	15	25
93042312	14	5.7N	141.3E	30	49	102	152	167	173	205	0	0	5	10	15	25
93042318	15	5.7N	140.3E	30	18	53	82	91	130	223	0	0	5	10	20	25
93042400	16	5.9N	139.4E	30	26	64	77	83	122	248	0	0	5	10	20	25
93042406	17	6.2N	138.6E	30	30	48	59	24	30	133	0	0	5	10	15	20
93042412	18	6.5N	137.7E	30	32	26	13	49	94	219	0	0	5	10	15	25
93042418	19	6.8N	136.8E	30	53	49	84	124	166	283	0	0	10	10	15	25
93042500	20	6.9N	135.8E	30	91	102	128	162	182	274	0	0	10	10	20	20
93042506	21	7.0N	134.8E	30	29	43	91	127	149		0	5	10	10	20	
93042512	22	7.0N	134.0E	30	53	103	144	176	235		0	5	5	10	15	
93042518	23	7.0N	133.2E	25	72	120	160	203	271		0	0	5	5	15	
93042600	24	7.0N	132.5E	25	35	25	13	38	67		0	0	0	10	10	

TROPICAL DEPRESSION 04W (CONTINUED)

93042606	25	7.0N	131.8E	25	24	24	21	59			0	0	0	5		
93042612	26	7.0N	131.1E	25	24	34	83	115			0	0	5	5		
93042618	27	7.0N	130.4E	25	13	56	102				0	0	5			
93042700	28	7.0N	129.5E	25	13	42	65				0	5	5			
93042706	29	6.9N	128.6E	25	13	34					0	5				
93042712	30	6.7N	127.8E	20	32	61					5	5				
93042718	31	6.6N	127.0E	20	48						0					
			AVERAGE		37	68	101	131	162	216	1	3	5	7	12	17
			# CASES		31	30	28	26	24	20	31	30	28	26	24	20

TROPICAL STORM JACK (05W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93051700	1	11.0N	158.9E	25	13	85	145	210	289	587	0	5	5	10	5	-10
93051706	2	11.3N	159.2E	25	8	66	126	194	301		0	0	5	10	0	
93051712	3	11.5N	159.6E	25	21	60	117	211	313		0	0	5	10	0	
93051718	4	11.7N	159.7E	30	11	38	113	196	293		0	5	10	5	0	
93051800	5	12.0N	159.6E	30	11	50	111	179	289		0	5	10	5	-5	
93051806	6	12.2N	159.4E	30	18	81	142	234	385		5	10	10	5	-10	
93051812	7	12.4N	158.9E	30	59	126	218	363	570		5	0	0	-10	-15	
93051818*	8	12.4N	158.3E	30	5	8	18	53			0	0	-5	-15		
93051906*	9	12.5N	157.2E	30	13	26	71	118			0	0	-5	-5		
93051918	10	12.5N	155.9E	30	16	74	100	106	168	364	0	0	-5	0	0	5
93052000	11	12.5N	155.2E	35	18	71	53	83	133		0	0	0	0	5	
93052006	12	12.3N	154.3E	35	18	16	48	68	66		0	0	0	5	0	
93052012	13	12.3N	153.3E	35	5	54	115	108	104		-5	-5	0	5	5	
93052018	14	12.8N	152.5E	35	13	54	72	79	123		-5	0	5	5	10	
93052100	15	13.5N	151.9E	35	16	30	42	120			-5	0	5	10		
93052106	16	14.2N	151.2E	30	5	75	195	348			-5	0	0	0		
93052112*	17	14.9N	150.4E	30	23	120					-5	-5				
93052200**	18	15.2N	148.4E	25	18	31					5	10				
93052206	19	15.2N	147.3E	25	23	50					0	5				
93052218	20	15.0N	145.3E	20	18						0					
			AVERAGE		17	59	106	167	253	476	2	3	4	6	5	8
			# CASES		20	19	16	16	12	2	20	19	16	16	12	2

* TD Warning Issued

** Regenerated Warning

SUPER TYPHOON KORYN (06W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93061518	1	4.9N	156.7E	25	55	95	143	185	198	113	0	5	5	5	10	15
93061600	2	5.1N	156.6E	25	64	109	157	191	169	60	0	0	0	5	10	15
93061606	3	5.3N	156.5E	25	78	126	173	181	140	64	5	5	5	10	10	15
93061612	4	5.6N	156.4E	30	68	114	148	129	93	117	0	0	5	10	10	15
93061618	5	6.0N	156.4E	30	64	109	123	102	106	184	0	0	5	10	10	15
93061700	6	6.5N	156.3E	35	5	25	77	151	240	332	0	0	5	5	10	15
93061706	7	7.0N	156.1E	35	8	48	117	189	263	330	0	5	5	10	10	15
93061712	8	7.4N	155.8E	35	8	64	131	206	278	321	0	5	5	10	10	15
93061718	9	7.5N	155.3E	35	30	77	129	192	250	280	0	0	5	5	10	15
93061800	10	7.6N	154.6E	35	8	43	114	173	196	201	0	0	0	0	0	10
93061806	11	7.6N	153.8E	35	30	60	96	131	144	166	0	0	0	0	0	10
93061812	12	7.6N	152.9E	35	25	49	93	134	168	186	0	0	5	10	10	5
93061818	13	7.6N	151.8E	35	13	59	135	185	228	177	0	0	5	10	10	0
93061900	14	7.5N	150.8E	35	17	56	72	96	107	0	0	5	10	10	15	5
93061906	15	7.4N	149.8E	35	13	42	98	139	149	115	0	0	5	10	15	0

SUPER TYPHOON KORYN (06W) (CONTINUED)

93061912	16	7.2N	148.9E	35	18	63	125	146	125	53	0	5	10	10	5	-10
93061918	17	7.0N	148.1E	35	46	112	167	173	114	78	0	5	10	10	0	-15
93062000	18	6.9N	147.6E	35	72	137	162	148	117	119	0	0	5	5	-5	-30
93062006	19	7.0N	147.1E	35	62	78	86	120	164	218	0	0	5	0	-10	-45
93062012	20	7.0N	146.6E	35	69	82	96	148	174	248	0	0	0	-5	-15	-60
93062018	21	7.2N	145.8E	35	98	106	94	120	138	206	0	0	-5	-10	-20	-70
93062100	22	7.5N	145.1E	35	107	94	90	90	112	138	0	-5	-10	-15	-30	-80
93062106	23	8.0N	144.1E	35	99	81	91	109	134	187	0	-10	-15	-25	-45	-85
93062112	24	8.5N	142.9E	40	84	104	134	176	189	225	-5	-10	-20	-30	-60	-80
93062118	25	9.3N	141.4E	45	90	112	148	181	203	258	0	-10	-20	-40	-60	-75
93062200	26	9.8N	140.1E	50	46	106	146	169	204	279	0	-5	-20	-50	-65	-60
93062206	27	10.3N	139.0E	55	47	89	130	159	201	287	0	-10	-35	-55	-70	-55
93062212	28	10.7N	137.9E	60	45	61	68	105	135	229	-5	-20	-50	-65	-70	-50
93062218	29	11.2N	136.8E	65	11	21	29	71	104	219	-5	-25	-50	-65	-60	-40
93062300	30	11.8N	135.3E	75	13	26	24	51	95	240	0	-20	-30	-25	-15	5
93062306	31	12.2N	134.3E	90	13	31	70	111	161	286	0	-15	-20	-15	-5	20
93062312	32	12.7N	133.2E	105	13	50	105	159	224	423	0	-10	-15	-10	0	25
93062318	33	13.1N	132.0E	115	13	62	87	132	202	413	0	-10	-10	0	10	35
93062400	34	13.4N	130.8E	125	5	21	31	46	108	281	0	-5	5	10	15	10
93062406	35	13.6N	129.6E	130	8	18	30	47	108	289	0	5	10	15	10	-5
93062412	36	14.0N	128.5E	130	18	29	63	129	213	418	0	5	10	15	10	-5
93062418	37	14.4N	127.4E	130	0	8	33	111	202	452	0	5	10	10	-10	10
93062500	38	14.9N	126.3E	125	8	30	70	140	228	471	-5	-15	-15	-10	-10	25
93062506	39	15.5N	125.0E	120	18	37	82	161	258	580	-5	-5	0	-10	-5	40
93062512	40	16.2N	123.9E	115	8	58	136	242	340	695	-10	0	-10	-5	0	60
93062518	41	16.8N	122.6E	110	12	85	169	269	388		5	5	0	5	5	
93062600	42	17.5N	121.2E	105	18	52	135	235	418		0	0	5	-5	0	
93062606	43	18.2N	119.8E	90	33	85	175	307	511		0	15	20	5	15	
93062612	44	18.9N	118.4E	90	11	86	162	320	495		0	10	5	20	35	
93062618	45	19.5N	116.8E	90	0	33	120	309			0	-5	-10	-10		
93062700	46	20.0N	115.3E	90	0	35	160	311			0	-5	5	10		
93062706	47	20.7N	113.9E	85	13	62	221				0	0	0			
93062712	48	21.4N	112.4E	85	5	131	268				0	5	10			
93062718	49	21.5N	110.7E	80	39	191					0	0				
93062800	50	21.5N	108.9E	65	72	173					-15	5				
93062806	51	21.4N	106.7E	50	72						5					
			AVERAGE		35	73	115	161	200	249	1	6	11	15	18	29
			# CASES		51	50	48	46	44	40	51	50	48	46	44	40

TROPICAL DEPRESSION 07W

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93061706	1	9.4N	130.1E	25	13	32	54	91	152		0	0	-5	0	5	
93061712	2	9.8N	129.8E	25	13	41	94	200	297		0	0	-5	5	5	
93061718	3	10.3N	129.4E	25	18	50	131	229	357		0	-5	-5	0	10	
93061800	4	10.7N	128.8E	25	37	69	152	268	385		0	-5	5	5	5	
93061806	5	11.2N	128.0E	30	16	21	103	210			0	5	10	15		
93061812	6	11.7N	127.2E	30	18	79	161	247			0	10	10	10		
93061818	7	12.2N	126.0E	30	8	52	136				0	5	10			
93061900	8	12.7N	124.7E	25	44	131	219				5	5	5			
93061906	9	13.3N	123.4E	25	60	136					5	5				
93061912	10	13.9N	122.0E	25	29	58					0	0				
93061918	11	14.6N	120.6E	20	29						0					
93062000	12	15.2N	119.2E	20	50						0					
			AVERAGE		29	68	132	208	298		1	4	7	6	6	
			# CASES		12	10	8	6	4		12	10	8	6	4	

TYPHOON LEWIS (08W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93070700	1	10.0N	128.3E	30	58	103	108	92	72	172	0	5	0	-5	-15	-25
93070706	2	10.7N	127.8E	30	21	35	17	46	99	231	0	5	5	0	-10	-10
93070712	3	11.3N	127.1E	30	13	35	111	205	295	475	0	0	-5	-15	-30	-35
93070718	4	11.8N	126.3E	30	17	76	175	272	355	513	0	0	-10	-20	-35	-30
93070800	5	12.2N	125.2E	35	13	50	118	193	262	343	-5	-10	-20	-30	-40	-20
93070806	6	12.7N	124.0E	35	13	59	107	161	220	236	-5	-10	-20	-25	-35	0
93070812	7	13.2N	122.4E	40	44	116	193	252	307	309	-5	-15	-25	-35	-35	5
93070818	8	13.6N	120.8E	45	77	143	196	276	320	314	-10	-15	-15	-25	-10	25
93070900	9	14.3N	119.3E	50	88	150	203	263	286	259	-15	-25	-30	-30	-10	30
93070906	10	15.2N	117.9E	55	16	26	30	74	121	194	-5	-5	-10	-20	-15	10
93070912	11	15.9N	116.4E	60	18	58	102	128	130	222	-5	-10	-10	-15	-10	15
93070918	12	16.6N	114.9E	65	12	18	57	101	168	266	-10	-20	-15	-15	-10	10
93071000	13	17.3N	113.5E	75	8	36	94	150	186	289	-10	-10	-15	-10	0	15
93071006	14	18.0N	112.0E	85	11	72	151	180	210		-5	-5	-10	0	10	
93071012	15	18.3N	110.5E	85	6	55	113	169	222		0	0	-5	0	0	
93071018	16	18.4N	109.2E	80	24	75	117	169	205		0	15	10	10	5	
93071100	17	18.5N	108.0E	75	0	57	90	111	126		0	0	5	5	10	
93071106	18	18.6N	107.2E	70	11	40	54	45			0	5	10	5		
93071112	19	18.7N	106.5E	65	16	38	37	30			-10	0	5	5		
93071118	20	18.8N	105.9E	55	18	24	41				0	15	15			
93071200	21	18.9N	105.3E	45	18	76	140				0	10	5			
93071206	22	19.0N	104.6E	35	18	53					5	5				
93071212	23	19.0N	103.8E	30	23	23					-5	0				
			AVERAGE		24	62	108	154	211	295	4	8	12	14	16	18
			# CASES		23	23	21	19	17	13	23	23	21	19	17	13

TROPICAL STORM MARIAN (09W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93071312	1	8.4N	137.1E	25	85	163	252	334	377	452	-5	-5	-5	0	20	50
93071318	2	8.8N	135.8E	30	51	104	186	246	276	385	0	0	0	15	35	40
93071400	3	9.5N	134.5E	35	18	55	108	125	144	294	0	5	15	35	45	40
93071406	4	10.3N	133.2E	35	21	76	104	121	146	334	0	0	20	40	45	45
93071412	5	11.3N	132.1E	40	16	26	59	98	85		-5	0	20	35	50	
93071418	6	12.4N	131.1E	45	18	8	23	51	37		0	15	35	45	60	
93071500	7	13.4N	130.1E	45	34	72	96	100	156		0	20	35	50	60	
93071506	8	14.1N	129.0E	40	37	53	59	86	159		0	15	25	40	55	
93071512	9	14.7N	128.0E	35	45	46	46	105			-10	0	10	10		
93071518	10	15.3N	126.9E	30	49	33	83	161			-5	0	10	15		
93071600	11	15.9N	125.8E	30	40	100	202				0	5	0			
93071606	12	16.6N	124.9E	30	71	170	267				0	0	5			
93071612	13	17.6N	124.4E	25	160	297					0	0				
93071618	14	18.4N	124.1E	25	115	226					0	5				
93071700	15	19.3N	123.8E	25	29						0					
93071706	16	20.1N	123.6E	20	6						0					
			AVERAGE		50	103	124	143	173	367	2	5	15	29	46	44
			# CASES		16	14	12	10	8	4	16	14	12	10	8	4

TYPHOON NATHAN (10W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93071912	1	14.0N	149.9E	30	38	80	124	170	223	268	-5	-5	-5	0	10	25
93071918	2	14.6N	149.1E	30	24	50	83	124	157	149	0	-5	0	10	20	35
93072000	3	15.2N	148.2E	35	45	74	112	136	162	148	0	5	10	20	30	40

TYPHOON NATHAN (10W) (CONTINUED)

93072006	4	15.7N	147.2E	40	29	38	54	54	55	155	0	5	10	20	30	40
93072012	5	16.2N	146.2E	40	34	46	66	84	108	227	5	10	20	30	40	35
93072018	6	16.7N	145.2E	45	37	55	83	109	139	279	5	15	25	35	40	40
93072100	7	17.3N	144.2E	45	13	13	24	73	127	54	0	5	15	25	25	15
93072106	8	18.0N	143.3E	45	21	43	58	121	204	140	0	5	15	20	20	-5
93072112	9	18.7N	142.4E	45	20	45	94	158	219	149	0	5	10	15	10	-10
93072118	10	19.4N	141.5E	45	33	78	154	219	228	243	0	0	0	10	5	0
93072200	11	20.1N	140.9E	45	33	85	158	229	176	393	0	5	5	0	-5	0
93072206	12	20.9N	140.5E	45	12	78	156	188	161	540	0	0	5	0	-20	10
93072212	13	21.4N	140.3E	45	8	58	99	43	191	513	0	0	0	-5	-20	15
93072218	14	21.9N	140.1E	50	18	42	18	127	305		0	5	5	-10	0	
93072300	15	22.4N	139.9E	50	11	22	126	338	511		0	0	0	-10	15	
93072306	16	22.9N	139.8E	50	18	66	249	440	541		0	0	-10	0	20	
93072312	17	23.6N	139.7E	55	18	154	386	565	584		0	0	-10	10	25	
93072318	18	25.1N	139.4E	55	6	105	216	255			0	-5	5	25		
93072400	19	27.2N	138.7E	60	30	128	203	172			0	-5	20	20		
93072406	20	29.7N	137.9E	70	5	81	158				0	15	20			
93072412	21	32.2N	136.4E	70	10	168	214				0	5	25			
93072418	22	34.2N	134.7E	55	6	96					0	20				
93072500	23	36.0N	133.1E	45	5	11					0	10				
93072506	24	37.5N	132.7E	30	5						0					
93072512	25	38.7N	133.0E	25	34						0					
			AVERAGE		21	71	135	190	241	251	1	6	10	14	20	21
			# CASES		25	23	21	19	17	13	25	23	21	19	17	13

TROPICAL STORM OFELIA (11W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93072506	1	20.3N	137.3E	30	23	82	177	247	234	138	5	10	20	10	-5	0
93072512	2	21.9N	136.5E	35	44	99	203	255	169		0	5	20	10	0	
93072518	3	23.2N	135.5E	40	37	85	158	138	29		0	5	15	0	5	
93072600	4	24.5N	134.2E	45	16	42	23	98	118		0	10	15	0	5	
93072606	5	25.5N	133.1E	45	8	27	78	219	83		0	10	10	5	5	
93072612	6	26.9N	132.4E	45	39	127	293	347			0	5	10	0		
93072618	7	28.6N	131.6E	45	18	85	265	194			0	5	5	5		
93072700	8	30.6N	131.2E	45	12	103	110				0	-10	-5			
93072706	9	32.8N	131.5E	45	5	65	43				-5	0	0			
93072712	10	35.8N	132.6E	40	20	36					5	10				
93072718	11	38.6N	133.8E	30	42	294					10	10				
93072800	12	40.2N	134.0E	30	117						0					
			AVERAGE		32	96	151	215	127	138	2	7	11	4	4	0
			# CASES		12	11	9	7	5	1	12	11	9	7	5	1

TYPHOON PERCY (12W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93072718	1	22.0N	128.9E	30	58	126	138	164	282		-5	0	0	-5	5	
93072800	2	23.3N	128.9E	30	8	24	49	26	166		0	-5	-10	-10	0	
93072806	3	24.4N	128.9E	35	18	73	90	40	146		0	0	-5	-10	-5	
93072812	4	25.4N	128.7E	40	24	43	51	182	266		0	-10	-10	-5	0	
93072818	5	26.5N	128.7E	45	16	79	224	382			5	-5	5	15		
93072900	6	27.7N	128.8E	55	32	127	307	417			0	0	10	10		
93072906	7	29.5N	129.1E	60	20	62	172				10	20	15			
93072912	8	31.7N	129.7E	65	19	94	153				10	5	5			
93072918	9	34.3N	130.6E	60	19	47					0	0				
93073000	10	37.0N	132.1E	55	12	126					0	0				
93073006	11	39.4N	133.8E	50	55						0					

TYPHOON PERCY (12W) (CONTINUED)

93073012	12	41.4N	135.2E	45	23						0					
			AVERAGE		26	80	148	202	215		3	5	8	9	3	
			# CASES		12	10	8	6	4		12	10	8	6	4	

TYPHOON ROBYN (13W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93080112	1	7.4N	152.3E	25	37	83	109	171	232	118	0	-5	-15	-20	-15	-5
93080118	2	8.0N	151.1E	25	70	98	136	195	208	71	0	-5	-10	-5	0	10
93080200	3	8.7N	149.9E	30	40	31	61	96	84	188	0	-10	-10	-5	0	20
93080206	4	9.1N	148.7E	35	17	72	125	209	318	563	0	-5	0	5	5	35
93080212	5	9.4N	147.5E	45	35	86	134	219	303	418	0	0	0	5	15	40
93080218	6	9.6N	146.2E	50	47	79	157	278	363	461	0	5	5	5	20	45
93080300	7	9.8N	144.9E	55	31	39	112	195	276	384	5	10	15	25	45	60
93080306	8	10.0N	143.6E	55	71	147	253	364	448	565	10	15	15	25	45	60
93080312	9	10.2N	142.5E	60	30	106	192	281	341	437	5	10	15	30	35	35
93080318	10	10.4N	141.9E	60	13	48	101	151	226	344	5	5	15	30	35	25
93080400	11	10.7N	141.5E	65	25	83	148	179	221	219	0	0	15	20	30	5
93080406	12	11.1N	141.0E	70	26	54	92	136	157	198	0	5	15	20	30	-5
93080412	13	11.5N	140.7E	70	16	24	30	49	79	151	0	10	10	20	15	-10
93080418	14	12.0N	140.3E	70	0	0	26	54	83	163	0	10	15	25	10	-10
93080500	15	12.5N	139.9E	65	29	109	166	212	245	249	5	0	5	5	-5	-10
93080506	16	13.2N	139.3E	65	26	35	60	99	123	121	0	-5	0	-15	-25	-10
93080512	17	14.1N	138.5E	70	29	44	76	110	131	169	0	5	-5	-15	-25	-5
93080518	18	15.0N	137.9E	70	35	64	88	122	142	194	0	5	-15	-25	-25	0
93080600	19	15.9N	137.2E	70	13	37	54	68	67	109	-5	-15	-25	-30	-25	5
93080606	20	16.6N	136.3E	70	0	11	28	41	55	118	0	-20	-35	-30	-20	5
93080612	21	17.4N	135.4E	85	0	17	24	50	58	150	0	-10	-15	-5	-5	0
93080618	22	18.4N	134.5E	95	6	5	21	39	60	187	0	-10	-5	0	0	5
93080700	23	19.3N	133.5E	105	6	30	28	33	49	199	0	-5	-5	0	0	15
93080706	24	20.1N	132.6E	115	12	29	53	57	99	331	-5	-5	0	5	10	20
93080712	25	21.0N	131.9E	120	24	69	90	107	166	489	-5	-5	0	5	5	25
93080718	26	22.1N	131.3E	120	16	40	47	89	177	460	-5	0	5	10	10	35
93080800	27	23.2N	130.8E	120	5	13	12	63	182		-5	5	10	10	20	
93080806	28	24.3N	130.3E	115	5	18	7	95	234		0	5	10	10	20	
93080812	29	25.3N	129.8E	110	5	20	80	207	379		5	10	10	15	20	
93080818	30	26.4N	129.4E	105	0	42	127	254	313		5	10	10	20	30	
93080900	31	27.6N	129.2E	100	8	12	12	20			0	-5	0	-5		
93080906	32	29.0N	129.1E	95	7	11	31	89			0	-5	-5	0		
93080912	33	30.5N	129.1E	95	13	20	12				0	5	5			
93080918	34	32.3N	129.3E	90	17	35	25				0	5	10			
93081000	35	34.2N	130.1E	80	6	60					0	5				
93081006	36	36.3N	131.2E	75	0	25					0	10				
93081012	37	38.4N	132.9E	65	6						0					
93081018	38	39.1N	133.9E	55	55						5					
			AVERAGE		21	48	80	136	194	272	2	7	10	14	18	19
			# CASES		38	36	34	32	30	26	38	36	34	32	30	26

TYPHOON STEVE (14W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93080600	1	12.9N	152.0E	25	13	8	34	71	113	197	0	0	0	5	10	10
93080606	2	13.4N	151.4E	25	13	33	62	72	105	194	0	0	0	5	10	5
93080612	3	13.9N	150.7E	30	29	72	120	164	236	314	-5	-5	-5	-5	-5	-5
93080618	4	14.3N	149.9E	30	70	130	169	207	266	347	-5	-10	-10	-10	-10	-5
93080700	5	14.6N	149.1E	35	24	13	13	60	102	284	0	5	10	15	20	30
93080706	6	14.7N	148.3E	40	18	33	23	54	72	234	0	5	5	10	15	25
93080712	7	15.0N	147.4E	40	18	13	36	78	144	285	5	5	5	10	15	25

TYPHOON STEVE (14W) (CONTINUED)

93080718	8	15.3N	146.5E	45	8	56	126	174	246	342	0	0	0	5	15	30
93080800	9	15.5N	145.6E	45	13	90	140	184	253	435	5	5	5	5	15	35
93080806	10	15.5N	144.7E	50	5	30	42	100	148	242	5	10	15	25	25	50
93080812	11	15.4N	143.7E	50	21	37	69	102	152	223	10	10	15	25	25	50
93080818	12	15.4N	142.8E	55	37	66	107	137	164	205	5	5	15	20	30	55
93080900	13	15.6N	141.9E	55	8	46	78	99	131	114	5	5	15	20	35	60
93080906	14	15.8N	141.1E	60	17	58	82	120	144	138	0	0	0	15	35	70
93080912	15	15.9N	140.3E	60	21	50	42	21	5	82	0	5	5	25	40	75
93080918	16	16.0N	139.5E	60	23	17	5	24	72	209	0	0	10	30	45	65
93081000	17	16.3N	138.6E	60	34	51	69	88	86	93	0	0	15	30	50	70
93081006	18	16.7N	137.7E	65	13	24	17	32	69		0	10	25	35	60	
93081012	19	17.1N	136.9E	65	12	8	54	113	193		0	15	25	40	60	
93081018	20	17.6N	136.2E	60	8	34	61	133	203		10	20	30	50	60	
93081100	21	18.2N	135.5E	55	13	45	84	152	201		0	10	25	50	65	
93081106	22	18.9N	134.9E	50	26	55	127	190			5	15	35	50		
93081112	23	19.6N	134.2E	50	26	66	127	161			0	15	35	45		
93081118	24	20.4N	133.4E	45	39	84	130				0	20	30			
93081200	25	21.3N	132.5E	40	11	36	69				-5	10	20			
93081206	26	22.3N	131.4E	30	11	27					0	5				
93081212	27	23.2N	130.3E	25	0	32					5	5				
93081218	28	23.9N	129.1E	25	5						0					
			AVERAGE		20	45	76	111	148	232	3	7	14	23	31	39
			# CASES		28	27	25	23	21	17	28	27	25	23	21	17

TROPICAL DEPRESSION 15W

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93081312	1	7.8N	175.9E	25	37	56	104				0	0	5			
93081318	2	8.4N	175.5E	25	41	71	110				0	5	15			
93081400	3	9.0N	175.2E	25	37	130					0	0				
93081406	4	9.6N	174.3E	25	45	119					0	5				
93081412	5	9.8N	173.0E	25	53						0					
93081418	6	9.8N	171.9E	20	11						0					
			AVERAGE		38	94	108				0	3	10			
			# CASES		6	4	2				6	4	2			

TYPHOON TASHA (16W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93081500*	1	9.4N	133.2E	25	91	225	327	396			0	0	0	-10		
93081506*	2	10.8N	131.2E	25	150	270	359	440			0	0	0	-5		
93081512*	3	12.5N	129.7E	25	151	168	188	194			0	-5	-10	-15		
93081518*	4	13.7N	128.7E	25	42	49	124	189			0	-5	-10	-15		
93081600	5	14.6N	128.0E	30	96	104	121	168	246	481	-5	-10	-10	-10	-15	-25
93081606	6	15.4N	127.2E	30	77	111	150	203	279	529	-5	-10	-10	-15	-15	-30
93081612	7	16.2N	126.4E	35	42	75	125	208	321	619	0	5	10	15	15	-10
93081618	8	16.9N	125.6E	35	29	39	30	61	151	418	0	5	5	5	10	-15
93081700	9	17.7N	124.9E	40	34	70	79	90	99	285	-5	-5	-5	-5	-5	-30
93081706	10	18.3N	124.1E	40	26	45	94	142	194	286	-5	-10	-15	-15	-20	-45
93081712	11	18.8N	123.2E	45	41	62	100	167	225	334	-5	-5	-5	-5	-10	-45
93081718	12	19.1N	122.2E	45	33	38	90	187	266	380	5	5	5	-5	-10	-45
93081800	13	19.3N	121.2E	50	18	49	106	169	198	284	0	0	0	-5	-20	-50
93081806	14	19.5N	120.2E	50	11	30	105	156	188	124	0	0	-5	-10	-45	-40
93081812	15	19.7N	119.1E	55	8	69	119	142	177	317	0	0	0	0	-10	-25
93081818	16	19.9N	118.0E	55	5	66	84	83	66		0	-5	0	-10	-30	
93081900	17	19.9N	116.9E	60	20	62	69	36	76		0	0	0	-15	-25	

* TD Warning Issued

TYPHOON TASHA (16W) (CONTINUED)

93081906	18	19.7N	116.0E	65	5	22	28	8	83		0	5	-5	-10	-15	
93081912	19	19.8N	115.2E	65	24	43	50	37	50		0	0	-10	-5	-10	
93081918	20	20.0N	114.5E	65	13	21	30	57	101		0	-10	-5	5	0	
93082000	21	20.2N	113.9E	70	21	39	55	84	166		0	-5	5	15	15	
93082006	22	20.6N	113.3E	80	8	22	83	150			0	5	0	0		
93082012	23	20.9N	112.6E	80	8	44	92	207			0	-10	-10	0		
93082018	24	21.3N	111.9E	75	18	61	130				0	0	0			
93082100	25	21.7N	111.0E	70	16	45	160				5	10	10			
93082106	26	22.1N	110.1E	60	23	65					5	5				
93082112	27	22.7N	109.3E	50	24	73					15	15				
93082118	28	23.3N	108.3E	40	39						10					
93082200	29	24.2N	106.6E	30	52						5					
			AVERAGE		39	73	117	156	170	369	2	5	5	8	16	33
			# CASES		29	27	25	23	17	11	29	27	25	23	17	11

TYPHOON KEONI (01C)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93082000	1	20.6N	179.1E	75	18	79	126	192	241	323	0	-10	-25	-35	-35	-20
93082006	2	21.2N	178.1E	80	6	37	94	139	181	256	-5	-15	-30	-35	-30	-15
93082012	3	21.9N	177.2E	85	11	49	67	80	89	114	0	-10	-25	-30	-25	-10
93082018	4	22.4N	176.0E	90	25	65	81	92	96	152	0	-15	-25	-25	-20	-10
93082100	5	23.1N	174.8E	95	18	60	86	107	106	60	-5	-15	-20	-20	-15	-10
93082106	6	23.8N	173.7E	100	20	48	80	117	104	73	-10	-15	-15	-15	-10	-10
93082112	7	24.6N	172.8E	100	10	40	67	146	294	574	-5	-5	-5	-5	-5	-15
93082118	8	25.3N	171.9E	100	20	43	71	189	340	556	-5	0	0	0	-5	-25
93082200	9	26.0N	171.1E	95	20	52	90	164	249	458	-5	5	5	5	-5	-25
93082206	10	26.7N	170.4E	90	20	26	101	204	291	492	-5	0	0	0	-5	-35
93082212	11	27.3N	169.9E	85	8	44	133	219	295	509	-5	0	5	0	-15	-30
93082218	12	28.0N	169.2E	80	29	139	273	358	415	632	-5	0	0	-5	-30	-30
93082300	13	28.3N	168.2E	75	5	48	100	112	101	191	0	5	0	-15	-30	-25
93082306	14	28.5N	167.1E	70	10	50	64	72	42	170	0	0	-5	-30	-35	-20
93082312	15	28.7N	165.9E	65	19	43	84	125	170	391	5	0	-10	-25	-20	5
93082318	16	28.9N	164.6E	65	18	84	170	255	356	536	5	0	-20	-25	-15	5
93082400	17	29.5N	163.5E	65	18	52	61	104	192		0	-10	-25	-25	-20	
93082406	18	30.2N	162.5E	65	5	26	78	224	336		0	-20	-25	-20	-10	
93082412	19	30.8N	161.8E	75	11	27	87	162	209	296	-5	-10	-10	-5	10	15
93082418	20	31.5N	161.1E	85	0	49	120	161	199	343	-5	5	0	5	10	15
93082500	21	31.9N	160.4E	85	30	107	172	199	227	418	0	10	5	15	15	20
93082506	22	32.2N	159.9E	85	27	86	137	184	203	441	0	10	15	15	20	20
93082512	23	32.3N	159.5E	80	5	27	98	115	166	420	-5	0	15	15	20	25
93082518	24	32.4N	159.2E	75	11	69	131	182	274	557	0	5	10	15	15	20
93082600	25	32.8N	159.1E	70	27	115	164	243	328	575	-5	15	15	20	20	20
93082606	26	33.7N	159.1E	60	20	31	60	86	182	425	0	10	15	15	15	20
93082612	27	34.5N	159.1E	50	38	66	108	119	178	326	5	0	5	5	5	0
93082618	28	35.1N	158.8E	50	20	61	37	43	128		-5	0	0	0	0	
93082700	29	35.6N	158.3E	45	12	48	115	201	291		0	5	10	10	0	
93082706	30	36.2N	158.3E	40	31	97	196	279			0	5	5	5		
93082712	31	36.8N	158.7E	35	5	72	173	262			0	5	5	0		
93082718	32	36.9N	159.4E	35	15	91	202				0	0	0			
93082800	33	37.0N	160.4E	30	23	72	121				0	5	0			
93082806	34	37.0N	161.6E	30	19	61					0	5				
93082812	35	36.5N	162.8E	25	20	83					0	-5				
			AVERAGE		17	62	114	166	217	372	3	6	11	14	16	18
			# CASES		35	35	33	31	29	25	35	35	33	31	29	25

TYPHOON VERNON (17W)

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
93082112*	1	17.8N	152.9E	25	24	55	61	68			0	-10	-15	-20		
93082200	2	19.7N	153.3E	35	58	137	201	213	216	155	0	0	5	0	0	-5
93082206	3	20.3N	152.9E	35	26	85	115	108	78	43	0	0	0	-5	-5	-5
93082212	4	20.6N	152.5E	40	20	55	65	53	29	155	-5	-5	-5	-10	-10	-5
93082218	5	20.8N	152.0E	40	17	33	76	127	176	282	-5	-10	-10	-15	-15	0
93082300	6	21.1N	151.6E	45	16	55	107	181	253	337	0	-5	-5	0	0	15
93082306	7	21.5N	151.0E	50	20	54	126	222	296	416	-5	-5	-5	0	5	15
93082312	8	22.2N	150.5E	55	16	43	120	182	252	374	0	0	10	25	40	45
93082318	9	22.8N	150.0E	60	30	84	160	212	251	429	0	0	10	30	45	45
93082400	10	23.5N	149.4E	65	24	71	109	169	207	367	0	0	5	10	20	30
93082406	11	24.3N	148.8E	70	17	22	24	83	109	363	0	0	5	15	20	30
93082412	12	25.2N	148.3E	75	13	58	125	127	95	451	0	5	15	25	30	40
93082418	13	26.1N	147.5E	80	18	48	89	75	132	568	0	5	20	25	30	45
93082500	14	26.8N	146.4E	80	20	51	62	54	173	664	0	5	20	25	35	40
93082506	15	27.7N	145.2E	80	13	7	70	134	156		0	10	20	20	-5	
93082512	16	28.5N	143.9E	80	7	36	113	184	273		5	10	20	25	-10	
93082518	17	29.1N	142.7E	75	5	64	151	211	291		10	10	20	20	-10	
93082600	18	29.7N	141.7E	75	13	108	199	271	395		10	15	25	10	-5	
93082606	19	30.4N	141.0E	75	21	91	143	234			10	15	20	0		
93082612	20	31.4N	140.8E	75	7	48	151	346			5	10	15	0		
93082618	21	32.6N	140.6E	75	7	20	45				0	-5	-5			
93082700	22	34.0N	140.6E	70	5	22	57				0	-5	-10			
93082706	23	35.6N	140.9E	70	7	23					5	5				
93082712	24	37.2N	141.6E	65	11	50					0	0				
93082718	25	38.9N	142.5E	60	12						0					
93082800	26	41.8N	144.1E	55	14						0					
			AVERAGE		18	56	108	163	199	355	2	6	12	14	17	25
			# CASES		26	24	22	20	17	13	26	24	22	20	17	13

* TD Warning Issued

TROPICAL STORM WINONA (18W)

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
93082206	1	11.6N	123.8E	25	13	30	41	34	29	117	0	-5	-5	0	5	20
93082212	2	11.7N	122.7E	25	11	35	48	11	71	171	0	-5	-5	0	5	20
93082218	3	11.6N	121.7E	30	26	67	70	80	117	192	0	0	0	5	15	25
93082300	4	11.6N	120.6E	30	5	21	87	176	250	313	0	0	0	5	15	30
93082306	5	11.8N	119.6E	35	16	48	140	223	281	325	0	0	0	10	20	35
93082312	6	12.0N	118.9E	35	16	78	168	256	314	370	5	5	5	10	20	35
93082318	7	12.6N	118.1E	40	30	119	210	285	333	386	0	0	5	10	20	30
93082400	8	13.4N	117.4E	40	48	121	183	223	254	245	0	0	5	10	15	25
93082406	9	14.3N	116.9E	45	13	34	83	113	149	206	0	5	10	15	25	25
93082412	10	15.1N	116.5E	45	18	71	128	200	257	278	0	0	0	5	20	20
93082418	11	15.8N	116.3E	45	24	49	97	156	194	207	0	0	0	10	10	5
93082500	12	16.4N	116.2E	45	6	72	149	235	315	424	0	0	0	10	0	-10
93082506	13	16.9N	116.1E	45	16	79	127	166	205	297	0	0	10	10	10	0
93082512	14	17.1N	116.0E	45	13	45	92	115	165	286	-5	-5	0	-5	-5	-10
93082518	15	17.3N	115.9E	45	16	45	64	97	162	299	-5	0	-5	-5	-5	-5
93082600	16	17.5N	115.8E	45	29	55	72	126	199	284	-5	0	-5	-10	-10	-10
93082606	17	17.6N	115.7E	40	8	24	66	132	206	312	-5	-10	-10	-15	-15	-5
93082612	18	17.7N	115.5E	40	12	51	114	183	261	415	-5	-10	-10	-15	-15	0
93082618	19	17.8N	115.1E	45	25	68	136	209	270		-5	-10	-10	-15	-10	
93082700	20	17.8N	114.6E	45	18	70	121	178	220		-5	-10	-10	-15	-10	
93082706	21	17.7N	113.9E	45	23	65	122	183	234		-5	-10	-10	-10	-5	
93082712	22	17.5N	113.1E	45	0	30	58	70	121		-5	-5	-10	-5	5	

TROPICAL STORM WINONA (18W) (CONTINUED)

93082718	23	17.3N	112.4E	45	12	41	64	82			0	-5	-5	0		
93082800	24	17.1N	111.6E	45	8	23	75	146			0	-5	-5	0		
93082806	25	16.9N	110.8E	45	5	5	61				0	5	10			
93082812	26	16.8N	109.9E	45	12	43	107				0	5	5			
93082818	27	16.9N	108.9E	40	31	93					0	0				
93082900	28	17.4N	108.0E	40	30	78					0	0				
93082906	29	18.0N	107.1E	35	13						0					
93082912	30	18.5N	106.2E	30	6						0					
			AVERAGE		17	56	104	154	210	285	2	4	5	8	12	17
			# CASES		30	28	26	24	22	18	30	28	26	24	22	18

SUPER TYPHOON YANCY (19W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93082906	1	20.0N	136.8E	30	11	11	49	25	173	257	-5	0	0	5	0	-15
93082912	2	20.0N	135.7E	30	28	98	112	32	113	235	0	5	10	15	15	-20
93082918	3	20.3N	134.8E	30	45	104	75	45	90	181	0	0	0	0	5	-25
93083000	4	20.9N	134.2E	30	30	73	61	90	93	150	0	0	-5	-5	-5	-35
93083006	5	21.5N	133.2E	35	13	65	172	192	217	287	0	0	-10	-10	-20	-50
93083012	6	22.0N	131.9E	35	0	126	177	174	195	204	0	-5	-15	-20	-30	-45
93083018	7	21.8N	130.4E	40	71	18	62	121	90	146	0	-5	-5	-20	-25	-30
93083100	8	21.1N	129.2E	45	37	28	53	45	67	142	0	-10	-15	-30	-35	-30
93083106	9	20.7N	128.1E	55	13	30	75	58	94	218	0	0	-15	-20	-35	-15
93083112	10	21.0N	127.3E	60	8	50	108	186	301	594	0	-10	-25	-30	-30	-10
93083118	11	21.5N	126.7E	65	36	63	84	104	125	286	0	-15	-20	-40	-25	25
93090100	12	22.1N	126.1E	75	12	13	42	113	188	417	0	-10	-10	-15	-5	50
93090106	13	22.7N	125.7E	90	5	44	93	141	180	308	0	0	-10	0	0	60
93090112	14	23.3N	125.4E	100	5	27	86	120	141	146	0	-5	-10	-15	-20	20
93090118	15	24.0N	125.4E	105	6	41	97	156	177		0	-15	-10	-15	5	
93090200	16	24.9N	125.7E	115	6	27	67	112	154		0	0	-5	-10	25	
93090206	17	25.9N	126.3E	130	0	31	78	98	108		0	20	20	25	35	
93090212	18	27.0N	127.1E	125	6	20	15	55	278		0	-5	-15	15	10	
93090218	19	28.1N	127.9E	120	6	11	30	112			0	-5	20	25		
93090300	20	29.4N	129.0E	120	11	27	108	77			0	0	40	30		
93090306	21	30.9N	130.3E	115	6	52	113				0	30	45			
93090312	22	32.7N	131.8E	110	7	72	86				0	40	35			
93090318	23	34.7N	133.7E	75	13	108					10	25				
93090400	24	37.2N	136.0E	55	33	427					0	5				
93090406	25	39.3N	137.4E	45	63						0					
93090412	26	40.6N	137.6E	40	20						0					
			AVERAGE		19	66	84	103	155	255	1	9	15	17	18	31
			# CASES		26	24	22	20	18	14	26	24	22	20	18	14

TROPICAL STORM ZOLA (20W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93090512	1	19.1N	129.7E	25	28	71	78	33	20	114	0	5	10	15	25	50
93090518	2	19.4N	129.0E	25	18	39	69	112	158	255	0	5	5	10	25	45
93090600	3	19.8N	128.4E	30	24	103	246	385	457	588	0	5	10	15	30	60
93090606	4	20.5N	128.0E	30	13	23	71	108	138	259	0	0	5	15	30	75
93090612	5	21.3N	127.8E	35	24	40	93	111	106	212	0	5	15	30	35	65
93090618	6	22.3N	128.2E	40	8	65	124	151	174	296	0	5	20	35	35	60
93090700	7	23.3N	128.7E	40	25	92	151	156	204		0	5	20	30	50	
93090706	8	24.3N	129.4E	45	44	96	132	181	240		0	5	20	25	65	
93090712	9	25.5N	130.2E	45	0	12	54	56	48		0	5	10	30	40	
93090718	10	26.8N	131.0E	45	18	62	98	103	101		0	5	0	35	20	
93090800	11	28.2N	131.8E	45	12	67	64	49			0	0	20	20		

TROPICAL STORM ZOLA (20W) (CONTINUED)

93090806	12	29.7N	132.4E	45	24	51	48	55			0	-5	30	20		
93090812	13	31.2N	133.2E	50	30	7	4				-5	10	20			
93090818	14	32.9N	134.3E	55	23	25	18				0	20	5			
93090900	15	34.4N	136.5E	40	23	90					5	15				
93090906	16	35.7N	138.3E	25	20	26					0	-5				
			AVERAGE		21	55	90	125	165	288	1	6	14	23	36	59
			# CASES		16	16	14	12	10	6	16	16	14	12	10	6

TYPHOON ABE (21W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93090900	1	18.4N	123.3E	25	8	16	58	159	269	565	0	0	-5	-10	-15	-15
93090906	2	18.9N	123.7E	30	47	111	187	310	409	701	0	0	-5	-5	-15	-10
93090912	3	19.2N	123.7E	30	33	70	164	253	359	634	0	-5	-10	-15	-15	-15
93090918	4	19.5N	123.8E	35	16	41	127	196	305	524	0	-5	-5	-15	-10	-10
93091000	5	19.8N	123.9E	40	12	63	118	204	323	541	0	-5	-10	-10	-10	-15
93091006	6	19.9N	123.9E	50	32	109	162	261	382	570	0	5	0	5	5	0
93091012	7	19.9N	123.6E	55	49	104	186	301	422	591	0	0	0	0	0	0
93091018	8	20.0N	123.3E	60	54	99	195	310	418	597	0	-5	0	0	5	10
93091100	9	20.3N	123.0E	70	5	61	140	224	308	582	0	10	15	15	15	35
93091106	10	20.6N	122.6E	80	17	81	154	221	283	550	0	5	5	0	-10	35
93091112	11	20.8N	122.0E	80	11	73	159	232	340	665	0	0	-10	-5	-10	60
93091118	12	20.9N	121.3E	85	8	18	68	96	126	161	-5	-20	-30	-50	-50	10
93091200	13	21.0N	120.6E	90	8	5	33	76	105	92	0	-5	-5	-10	5	25
93091206	14	21.1N	119.9E	95	8	28	86	124	116		-5	-5	-10	0	20	
93091212	15	21.2N	119.2E	100	6	41	81	97	81		-5	-5	-10	5	45	
93091218	16	21.5N	118.7E	100	13	45	72	73	72		0	-10	-5	20	35	
93091300	17	21.9N	118.3E	105	12	51	56	16	16		-5	-15	0	10	10	
93091306	18	22.2N	118.0E	110	8	8	49	98			0	0	15	30		
93091312	19	22.4N	117.6E	110	8	38	104	163			-10	0	25	20		
93091318	20	22.7N	117.0E	100	6	32	89				-10	15	40			
93091400	21	23.1N	116.3E	90	13	44	97				0	35	40			
93091406	22	23.4N	115.3E	70	8	28					5	20				
93091412	23	23.7N	114.3E	45	17	10					10	25				
93091418	24	24.2N	113.2E	25	13						10					
93091500	25	24.7N	112.3E	20	12						0					
			AVERAGE		17	52	114	180	255	522	3	8	12	12	16	18
			# CASES		25	23	21	19	17	13	25	23	21	19	17	13

TYPHOON BECKY (22W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93091418	1	17.4N	125.5E	25	62	61	49	83	184	353	5	0	-10	-10	-10	25
93091500	2	17.9N	124.5E	30	45	12	34	52	105	154	0	-5	-10	-15	-5	35
93091506	3	18.3N	123.3E	35	11	21	54	84	122	154	0	-5	-10	-10	10	30
93091512	4	18.5N	122.2E	40	30	66	86	140	171	151	-5	-10	-15	-5	15	30
93091518	5	18.8N	121.0E	45	12	46	85	145	165	137	-5	-10	-10	10	25	20
93091600	6	18.9N	119.7E	50	18	62	130	167	168		-5	-5	5	20	25	
93091606	7	19.4N	118.3E	55	23	62	123	159	162		0	0	15	25	20	
93091612	8	20.1N	116.9E	60	41	94	143	150	133		-5	5	20	25	15	
93091618	9	20.8N	115.3E	65	8	36	77	73	52		0	15	20	20	5	
93091700	10	21.5N	113.7E	60	0	52	102	155			0	-5	10	0		
93091706	11	22.1N	112.2E	55	6	34	58				0	5	10			
93091712	12	22.7N	110.7E	50	8	55	93				0	5	0			
93091718	13	23.2N	109.4E	40	12	49					5	10				
			AVERAGE		22	50	86	121	141	191	2	6	11	14	14	28

TYPHOON CECIL (23W)

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
			# CASES		13	13	12	10	9	5	13	13	12	10	9	5
93092218	1	14.0N	151.1E	25	87	169	273	373	430	562	0	0	5	5	0	-25
93092300	2	13.9N	150.5E	30	48	92	151	213	306	532	5	10	15	10	-5	-15
93092306	3	13.8N	150.0E	30	29	60	120	202	326	556	5	10	10	0	-15	-15
93092312	4	13.9N	149.5E	35	5	53	153	295	410	604	0	5	0	-15	-20	-15
93092318	5	14.1N	149.2E	35	18	108	228	366	468	670	5	0	-10	-25	-25	-10
93092400	6	14.8N	149.0E	40	37	124	271	381	456	753	0	-10	-25	-30	-25	10
93092406	7	15.7N	148.5E	45	30	120	263	368	461	901	0	-15	-30	-30	-20	20
93092412	8	16.7N	147.9E	55	37	77	121	155	230	690	0	-10	-10	-5	5	25
93092418	9	17.9N	147.1E	65	0	48	81	119	219	679	0	-10	-5	10	10	20
93092500	10	19.3N	146.3E	80	13	32	52	130	287		0	-5	0	10	30	
93092506	11	20.6N	145.6E	90	5	40	74	112	255		0	0	15	15	30	
93092512	12	21.8N	145.0E	95	13	29	77	153	252		0	10	5	20	5	
93092518	13	22.8N	144.7E	100	20	49	107	182	238		0	10	5	10	0	
93092600	14	23.8N	144.7E	100	17	72	147	180			0	5	20	5		
93092606	15	24.8N	145.0E	100	20	70	205	339			0	0	10	5		
93092612	16	25.9N	145.7E	100	13	53	106				0	10	-5			
93092618	17	27.0N	146.9E	95	6	66	135				0	5	-5			
93092700	18	28.8N	148.9E	75	20	98					5	-5				
93092706	19	30.7N	150.9E	75	13	72					0	0				
93092712	20	32.9N	153.1E	75	18						0					
93092718	21	35.6N	155.9E	70	27						0					
			AVERAGE		23	76	151	238	334	661	1	6	10	13	15	17
			# CASES		21	19	17	15	13	9	21	19	17	15	13	9

TYPHOON DOT (24W)

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
93092300	1	18.5N	112.7E	25	30	80	161	247	368	542	0	0	0	-5	-25	-60
93092306	2	18.5N	112.3E	25	41	115	185	294	428	650	5	0	0	-10	-35	-55
93092312	3	18.6N	112.0E	30	12	45	91	177	321	540	0	0	-10	-25	-45	-40
93092318	4	18.7N	111.8E	30	23	45	113	224	338	574	0	0	-15	-35	-50	-25
93092400	5	18.8N	111.6E	30	17	62	148	246	321	516	0	-5	-25	-45	-55	-15
93092406	6	19.0N	111.4E	30	16	77	170	257	344	540	0	-10	-35	-50	-50	-10
93092412	7	19.2N	111.4E	35	8	51	95	117	145	305	0	-15	-35	-45	-30	0
93092418	8	19.4N	111.6E	40	22	79	114	158	212		-5	-25	-40	-45	-15	
93092500	9	19.7N	111.9E	50	41	105	137	190	259		-15	-35	-50	-30	-5	
93092506	10	20.1N	112.2E	60	11	22	43	69	119		5	0	-5	20	25	
93092512	11	20.5N	112.4E	70	6	16	34	54	66		0	-5	10	15	10	
93092518	12	20.8N	112.4E	75	11	18	48	84			0	0	20	20		
93092600	13	21.1N	112.4E	80	12	36	71	108			5	15	30	25		
93092606	14	21.6N	112.5E	75	0	24	48				5	20	20			
93092612	15	22.2N	112.5E	60	5	8	38				0	5	5			
93092618	16	22.8N	112.6E	45	11	18					0	0				
93092700	17	23.4N	112.7E	35	20	24					0	0				
93092706	18	24.0N	112.9E	30	25						0					
			AVERAGE		18	49	100	172	266	524	2	8	20	28	31	29
			# CASES		18	17	15	13	11	7	18	17	15	13	11	7

SUPER TYPHOON ED (25W)

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
93093000	1	12.8N	146.3E	25	6	24	29	18	23	70	0	-5	-15	-20	-25	-25
93093006	2	13.2N	145.7E	30	6	18	45	66	66	63	0	-10	-20	-25	-35	-30
93093012	3	13.5N	145.0E	35	13	23	44	47	26	75	-5	-10	-15	-20	-20	-20

SUPER TYPHOON ED (25W) (CONTINUED)

93093018	4	13.8N	144.4E	40	0	29	37	42	25	110	0	-5	-5	-15	-5	-10
93100100	5	14.0N	143.5E	50	0	18	39	26	34	121	0	-5	-10	-10	-10	-15
93100106	6	14.2N	142.5E	55	13	35	58	70	87	148	0	-10	-20	-15	-15	-25
93100112	7	14.4N	141.7E	65	11	18	67	95	105	136	0	-5	-5	-5	-5	-25
93100118	8	14.6N	141.0E	70	24	51	109	141	130	92	0	-10	-5	-5	-5	-20
93100200	9	14.8N	140.2E	80	16	47	79	84	71	194	0	0	0	-10	-10	-15
93100206	10	15.4N	139.4E	90	18	51	66	68	90	280	0	0	-5	-15	-20	-10
93100212	11	16.0N	138.5E	90	6	5	13	45	99	268	0	-5	-10	-20	-35	-10
93100218	12	16.7N	137.6E	95	6	8	26	65	131	323	-5	-15	-20	-35	-40	-10
93100300	13	17.3N	136.7E	100	5	13	45	98	169	324	-10	-20	-25	-45	-35	-5
93100306	14	17.8N	135.9E	105	5	29	74	131	211	369	-10	-15	-25	-35	-30	-5
93100312	15	18.3N	135.1E	110	5	34	91	163	255	415	-5	-10	-40	-35	-25	-5
93100318	16	18.7N	134.4E	115	11	53	107	180	252	439	-5	-25	-40	-35	-20	-5
93100400	17	19.1N	133.8E	120	8	24	76	171	251	379	0	-30	-35	-25	-15	0
93100406	18	19.5N	133.3E	130	16	69	154	224	260	211	-5	-25	-30	-15	-10	10
93100412	19	19.8N	132.8E	140	5	69	166	222	316	523	-5	5	15	15	5	-5
93100418	20	20.3N	132.7E	140	12	53	102	167	270	428	0	10	20	15	5	5
93100500	21	20.8N	132.7E	135	8	47	101	203	259	338	0	10	20	20	10	0
93100506	22	21.4N	132.9E	130	12	49	106	207	222	255	0	10	15	20	15	0
93100512	23	22.1N	133.2E	120	8	21	94	208	266		0	0	-5	-10	-5	
93100518	24	22.9N	133.5E	110	6	20	95	173	222		0	-5	-10	-5	5	
93100600	25	24.0N	134.0E	105	18	28	111	136	207		0	0	-5	5	5	
93100606	26	24.9N	134.6E	100	12	91	135	222	306		0	0	0	10	0	
93100612	27	25.9N	135.6E	95	20	63	129	209			0	0	10	10		
93100618	28	27.2N	137.0E	90	16	55	121	154			-5	-5	5	0		
93100700	29	28.5N	138.4E	85	24	56	91				0	5	5			
93100706	30	30.0N	139.9E	75	13	42	30				10	15	10			
93100712	31	31.6N	141.7E	65	42	98					0	-5				
93100718	32	33.2N	144.0E	55	56	100					0	-5				
93100800	33	34.5N	146.5E	55	19						-5					
93100806	34	35.7N	149.2E	50	28						-5					
			AVERAGE		14	42	82	130	168	253	2	9	15	18	16	12
			# CASES		34	32	30	28	26	22	34	32	30	28	26	22

TYPHOON FLO (26W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93100112	1	16.7N	128.1E	30	29	69	34	29	45	90	-5	-5	-5	-5	-5	-5
93100118	2	16.8N	127.3E	30	18	5	41	72	98	83	0	0	-5	-10	-15	-5
93100200	3	16.9N	126.3E	35	45	139	211	258	300	380	0	0	-10	-20	-20	0
93100206	4	16.9N	126.0E	35	5	34	58	85	126	233	0	-5	-10	-15	-10	15
93100212	5	16.8N	125.7E	40	8	24	43	69	102	199	-5	-10	-15	-20	-15	10
93100218	6	16.8N	125.4E	45	12	33	37	67	95	129	0	-5	-10	-5	-5	10
93100300	7	16.7N	124.9E	50	25	51	95	147	174	132	-5	-10	-15	-5	5	15
93100306	8	16.7N	124.5E	55	36	69	119	173	157	188	0	0	0	0	5	25
93100312	9	16.6N	124.0E	60	33	59	101	108	56	390	0	-5	0	5	5	25
93100318	10	16.6N	123.4E	65	44	88	127	111	37	495	0	0	5	10	5	25
93100400	11	16.5N	122.7E	70	5	46	54	54	161	625	0	-5	0	15	25	40
93100406	12	16.4N	121.9E	65	11	49	37	116	307	840	0	0	5	15	30	45
93100412	13	16.3N	121.0E	65	5	11	92	220	451	918	-10	-10	0	15	25	40
93100418	14	16.3N	120.2E	60	13	35	140	336	581	1073	-15	0	5	25	30	35
93100500	15	16.2N	119.7E	55	23	97	240	482	724	1301	-5	5	15	25	35	35
93100506	16	16.1N	119.6E	50	52	155	357	601	827	1529	0	5	20	25	40	30
93100512	17	16.2N	119.8E	50	18	72	266	456	687	1519	-5	0	0	0	0	-15
93100518	18	16.4N	120.2E	50	32	167	367	554	826	1732	-5	5	0	5	-5	-15
93100600	19	17.0N	120.9E	45	61	248	432	629	947		0	0	-5	-5	-15	
93100606	20	18.4N	122.1E	40	53	179	293	476	808		0	0	5	0	-5	
93100612	21	19.6N	123.5E	40	107	212	327	560	946		-5	0	0	-5	-10	

SUPER TYPHOON FLO (26W) (CONTINUED)

93100618	22	20.8N	125.0E	40	114	198	358	674	1075		-5	5	-5	-10	-15	
93100700	23	22.0N	126.3E	40	20	34	140	407			-5	-5	-20	-30		
93100706	24	23.3N	127.6E	35	13	84	262	544			0	-10	-25	-30		
93100712	25	25.0N	129.0E	40	30	147	387				-5	-20	-30			
93100718	26	27.1N	130.7E	45	66	213	473				-10	-25	-30			
93100800	27	29.4N	133.3E	50	49	227					-5	-15				
93100806	28	31.7N	136.7E	55	85	271					-10	-15				
93100812	29	34.1N	141.4E	60	44						0					
93100818	30	36.1N	145.4E	60	34						0					
			AVERAGE		37	108	196	302	434	659	3	6	9	13	15	22
			# CASES		30	28	26	24	22	18	30	28	26	24	22	18

TROPICAL STORM GENE (27W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93100618	1	9.1N	142.4E	25	16	30	133	240	336	562	0	5	10	15	20	40
93100700	2	9.4N	141.3E	25	66	113	216	303	402	634	0	5	5	15	20	40
93100706	3	9.9N	140.3E	25	56	165	276	384	492	762	0	0	0	5	20	40
93100712	4	10.8N	139.0E	25	132	147	247	365	521		0	0	5	10	25	
93100718	5	12.0N	137.8E	25	132	149	225	341	504		0	0	0	10	25	
93100800	6	13.3N	136.8E	30	71	98	116	218	310		0	0	0	10	15	
93100806	7	14.4N	136.1E	30	53	107	147	204			0	-5	-5	0		
93100812	8	15.6N	135.2E	30	39	76	97	128			0	-5	0	5		
93100818	9	16.9N	134.3E	35	33	33	65	121			0	5	15	20		
93100900	10	18.1N	133.4E	35	23	47	97				0	0	5			
93100906	11	19.4N	132.9E	35	23	58	97				0	0	10			
93100912	12	20.9N	132.5E	30	36	68					0	5				
93100918	13	22.3N	132.2E	30	39	66					0					
93101000	14	23.7N	132.0E	30	12						0					
93101006	15	25.1N	132.2E	30	11						0					
			AVERAGE		50	90	156	256	428	653	0	2	5	10	21	40
			# CASES		15	13	11	9	6	3	15	13	11	9	6	3

TROPICAL DEPRESSION 28W

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93100706	1	14.2N	119.5E	25	11	73	144	126	130	220	0	5	0	0	5	10
93100712	2	14.9N	120.7E	25	16	80	122	197	314	586	5	0	0	5	10	10
93100718	3	15.5N	121.9E	25	43	133	250	390	516	759	0	0	5	10	10	10
93100800*	4	16.1N	123.1E	25	13	30	114	201			0	0	0	5		
93100812	5	16.5N	124.4E	25	44	154	236	305	350	531	0	0	5	5	5	5
93100818	6	16.5N	124.5E	25	47	96	132	166	197	459	0	5	5	5	5	5
93100900	7	16.5N	124.6E	25	17	35					0	5				
93101206**	8	20.5N	118.1E	25	8	25	58				0	0	5			
93101212	9	20.8N	117.2E	25	21	55	97				0	0	10			
93101218	10	21.1N	116.4E	25	29	49					0	0				
93101300	11	21.4N	115.7E	25	0	28					0	10				
93101306	12	21.8N	115.0E	25	5						0					
93101312	13	22.5N	114.1E	20	12						0					
			AVERAGE		21	69	145	232	302	512	0	2	4	5	7	8
			# CASES		13	11	8	6	5	5	13	11	8	6	5	5

* TD Warning Issued

** Regenerated Warning

TROPICAL STORM HATTIE (29W)

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
93101906*	1	13.2N	163.4E	25	109	137	143	130			5	0	0	-5		
93101918	2	13.7N	160.7E	30	107	102	90	114	184	394	0	0	0	5	5	25
93102000	3	13.9N	159.5E	30	47	86	130	202	312	511	0	0	0	5	5	15
93102006	4	14.3N	158.6E	30	42	77	117	168	268	553	0	-5	0	0	10	10
93102012	5	14.7N	157.8E	30	60	101	151	232	351	665	0	-5	0	0	10	5
93102018	6	15.2N	157.1E	35	68	112	183	287	392	738	0	0	0	10	15	10
93102100	7	15.7N	156.5E	35	93	162	267	383	472	823	0	0	0	5	5	0
93102106	8	16.2N	156.0E	35	104	193	318	423	597	940	0	-5	5	5	0	0
93102112	9	16.8N	155.6E	35	85	187	305	415	641	1058	0	-5	5	0	-5	5
93102118	10	17.5N	155.3E	40	138	252	364	549	747	1273	0	5	10	0	0	15
93102200	11	18.4N	155.0E	40	116	210	294	468	599	1212	0	10	5	0	0	10
93102206	12	19.4N	154.7E	35	45	60	39	89	147		5	10	0	0	5	
93102212	13	20.4N	154.3E	35	18	27	52	84	125		0	-5	-15	-15	-10	
93102218	14	21.3N	153.8E	35	22	20	99	231	256		0	-10	-15	-15	-10	
93102300	15	22.1N	153.4E	40	108	152	253	331	318		-5	-15	-15	-5	-5	
93102306	16	23.9N	154.0E	45	53	128	209	202			-10	-15	-15	-5		
93102312	17	25.0N	154.5E	50	71	59	86	160			-15	-15	-10	-5		
93102318	18	26.0N	155.3E	50	77	58	110				-15	-15	-10			
93102400	19	26.6N	155.9E	50	64	96	249				-15	-10	-10			
93102406	20	27.6N	157.0E	50	49	128					-15	-10				
93102412	21	29.0N	158.4E	45	36	129					-5	-5				
93102418	22	31.0N	160.7E	45	6						0					
93102500	23	33.4N	163.6E	45	7						-10					
			AVERAGE		67	118	183	263	387	817	4	7	6	5	6	10
			# CASES		23	21	19	17	14	10	23	21	19	17	14	10

* TD Warning Issued

TYPHOON IRA (30W)

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
93102718	1	13.2N	143.6E	25	13	12	37	46	55	69	0	0	-5	5	0	-20
93102800	2	13.1N	142.1E	30	21	30	53	64	72	39	-5	-5	-10	0	-10	-30
93102806	3	13.1N	140.6E	30	90	112	132	135	133	66	5	0	5	-5	-20	-40
93102812	4	13.2N	139.1E	35	24	18	24	16	21	110	5	5	15	5	-5	-15
93102818	5	13.4N	137.6E	40	0	26	42	50	69	192	5	15	10	0	-10	-15
93102900	6	13.6N	136.3E	45	18	12	6	35	31	42	0	10	0	-10	-20	-5
93102906	7	13.8N	135.0E	40	45	59	45	48	32	13	5	-10	-20	-35	-45	-20
93102912	8	14.1N	133.7E	45	51	66	62	58	52	8	5	-10	-20	-35	-45	-15
93102918	9	14.4N	132.4E	55	40	26	21	6	26	66	0	-10	-25	-40	-40	5
93103000	10	14.6N	131.1E	65	18	23	43	36	18	58	-5	-15	-25	-30	-20	0
93103006	11	14.8N	129.8E	75	36	47	93	119	125	146	0	-10	-20	-20	-30	5
93103012	12	15.0N	128.5E	85	34	55	90	104	111	138	0	-10	-15	-10	-5	20
93103018	13	15.2N	127.4E	95	33	57	63	75	85	156	0	-10	-5	-5	15	25
93103100	14	15.3N	126.5E	105	5	21	39	76	120	143	0	-5	15	45	30	10
93103106	15	15.4N	125.7E	115	0	16	35	69	109	125	0	5	30	25	5	15
93103112	16	15.6N	124.8E	120	13	35	70	106	129	138	0	15	45	40	30	40
93103118	17	15.7N	124.0E	120	29	75	116	145	157	184	0	5	40	25	10	25
93110100	18	15.9N	123.0E	110	35	75	121	144	139	149	0	25	25	5	15	30
93110106	19	16.1N	122.0E	105	29	46	69	78	74	102	0	15	5	15	20	30
93110112	20	16.3N	121.0E	85	23	45	68	91	102	106	0	20	5	15	20	35
93110118	21	16.5N	120.0E	65	17	30	24	24	23	102	0	0	10	15	25	40
93110200	22	16.8N	119.0E	60	20	31	49	64	71	127	0	5	15	15	15	25
93110206	23	17.1N	118.1E	60	6	8	20	18	50		0	5	0	0	0	
93110212	24	17.4N	117.3E	60	18	29	58	106	172		-5	0	-5	5	5	
93110218	25	17.7N	116.5E	55	33	53	99	140	232		0	-5	0	0	0	
93110300	26	18.1N	115.8E	55	18	37	55	86	101		0	0	10	10	20	

TYPHOON IRA (30W) (CONTINUED)

93110306	27	18.5N	115.0E	55	8	12	18	55			0	0	5	10		
93110312	28	19.0N	114.3E	55	6	12	30	73			0	0	5	10		
93110318	29	19.5N	113.7E	50	0	0	37				0	0	5			
93110400	30	20.0N	113.0E	45	16	53	55				0	0	10			
93110406	31	20.6N	112.3E	45	8	24					0	5				
93110412	32	21.3N	111.6E	40	20	24					0	10				
93110418	33	22.0N	111.2E	35	16						0					
93110500	34	22.4N	111.1E	25	29						0					
			AVERAGE		23	37	56	74	89	104	1	7	14	16	18	21
			# CASES		34	32	30	28	26	22	34	32	30	28	26	22

TROPICAL STORM JEANA (31W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93110500	1	11.0N	154.7E	20	23	29	42	76	81	96	5	5	10	25	35	50
93110506	2	11.3N	153.6E	20	13	24	52	70	81	68	5	5	15	30	40	55
93110512	3	11.6N	152.5E	25	11	37	65	71	79	46	5	10	25	35	40	55
93110518	4	11.9N	151.5E	25	35	55	65	77	86	35	5	10	25	35	40	55
93110600	5	12.1N	150.5E	25	12	18	29	42	70	124	10	25	35	40	45	60
93110606	6	12.3N	149.5E	25	18	32	42	60	91	154	10	20	30	35	40	55
93110612	7	12.6N	148.5E	20	45	69	80	100	150	195	15	15	20	15	15	15
93110618	8	12.9N	147.4E	20	18	40	75	105	143	126	15	20	20	20	20	15
93110700	9	13.2N	146.3E	20	41	81	134	180	220	156	20	20	20	20	25	25
93110706	10	13.4N	145.2E	20	11	34	52	97	130	194	20	20	20	20	20	20
93110712	11	13.6N	144.0E	25	8	5	41	106	126	269	15	15	15	20	20	20
93110718	12	13.8N	142.8E	25	18	43	115	163	162	201	20	20	20	20	20	25
93110800	13	14.1N	141.5E	30	29	71	138	168	212	416	15	10	15	10	10	15
93110806	14	14.6N	140.3E	30	39	87	134	162	244	469	10	10	10	5	5	20
93110812	15	15.3N	139.0E	35	64	124	168	242	342	571	0	0	0	0	0	15
93110818	16	16.2N	137.8E	35	30	93	189	297	415	617	0	0	0	0	5	20
93110900	17	17.1N	136.8E	35	18	71	111	120	154	377	5	5	5	5	5	15
93110906	18	17.9N	136.2E	40	20	117	191	234	252	334	0	0	0	5	10	20
93110912	19	18.5N	135.9E	40	16	71	136	224	317	454	0	0	0	5	5	20
93110918	20	19.1N	135.9E	45	16	39	91	148	203		-5	-5	0	0	0	
93111000	21	19.7N	135.9E	45	8	30	81	155	240		0	0	5	10	20	
93111006	22	20.4N	136.0E	50	11	49	121	198	324		5	15	25	20	20	
93111012	23	20.9N	136.3E	50	18	78	162	293	448		5	15	25	25	25	
93111018	24	21.3N	136.8E	50	12	71	180	323			10	20	30	30		
93111100	25	21.6N	137.3E	50	12	48	139	254			0	5	10	20		
93111106	26	21.8N	137.9E	45	23	83	179				5	5	10			
93111112	27	21.9N	138.4E	45	89	182	288				5	10	15			
93111118	28	21.9N	138.8E	40	66	151					5	10				
93111200	29	21.9N	139.1E	35	17	62					5	5				
93111206	30	21.9N	139.4E	30	70						0					
			AVERAGE		28	66	115	159	199	258	7	10	15	18	20	30
			# CASES		30	29	27	25	23	19	30	29	27	25	23	19

TROPICAL DEPRESSION 32W

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
93111800	1	7.7N	129.7E	25	84	119	168				0	0	-5			
93111806	2	7.9N	128.1E	25	55	96					0	0				
93111812	3	8.3N	126.9E	25	30	84					0	0				
93111818	4	8.9N	126.2E	25	29						0					
93111900	5	9.2N	125.6E	25	18						0					
			AVERAGE		44	100	168				0	0	5			
			# CASES		5	3	1				5	3	1			

TROPICAL DEPRESSION 33W

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
93111806*	1	14.5N	161.4E	25	18	128	251				0	0	5			
93111818*	2	15.1N	159.6E	25	150	356					0	5				
93111906*	3	15.3N	156.8E	20	6						0					
			AVERAGE		58	243	251				0	3	5			
			# CASES		3	2	1				3	2	1			

* TD Warning Issued

TYPHOON KYLE (34W)

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
93111912	1	10.4N	128.6E	30	29	66	90	93	101	139	0	0	0	0	0	-20
93111918	2	10.7N	127.4E	35	24	74	79	78	54	76	0	5	0	0	0	-25
93112000	3	10.7N	126.4E	35	18	18	47	39	63	142	0	5	0	0	-5	-40
93112006	4	10.8N	125.3E	35	25	39	50	72	108	158	0	0	0	-5	-15	-50
93112012	5	11.0N	124.2E	35	24	58	67	112	152	214	0	-5	0	-10	-20	-40
93112018	6	11.3N	123.0E	40	13	11	46	88	117	202	0	0	0	-10	-20	-20
93112100	7	11.6N	121.8E	40	18	11	58	91	118	201	0	5	-5	-15	-35	15
93112106	8	11.7N	120.7E	40	21	18	52	81	116	226	0	0	-15	-20	-45	15
93112112	9	11.9N	119.6E	40	16	21	59	88	121	303	0	-5	-15	-35	-35	15
93112118	10	12.1N	118.1E	45	29	66	87	121	165		0	-10	-20	-45	-20	
93112200	11	12.2N	116.8E	50	42	72	88	114	175		0	-10	-30	-35	15	
93112206	12	12.4N	115.4E	60	63	80	103	142	205		0	-5	-25	5	25	
93112212	13	12.6N	114.2E	65	29	42	65	123	206		0	-10	-5	30	15	
93112218	14	12.7N	113.0E	70	0	16	47	89			0	-15	-5	10		
93112300	15	12.8N	111.7E	85	6	11	52	155			0	-10	20	5		
93112306	16	12.8N	110.5E	95	8	26	104				-10	0	15			
93112312	17	12.9N	109.3E	85	8	42	117				-10	20	10			
93112318	18	13.0N	107.9E	65	13	49					0	10				
93112400	19	13.3N	106.6E	30	25	89					0	5				
			AVERAGE		22	43	72	100	131	185	1	6	10	15	19	27
			# CASES		19	19	17	15	13	9	19	19	17	15	13	9

TYPHOON LOLA (35W)

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
93120200	1	8.6N	143.3E	30	32	123	210	282	357	398	-5	0	-5	-5	-10	-20
93120206	2	9.3N	141.6E	30	69	122	182	246	288	228	-5	-5	-5	-10	-15	-25
93120212	3	10.1N	139.9E	30	63	103	151	176	194	199	0	-5	-10	-15	-15	-25
93120218	4	10.7N	138.0E	35	51	67	119	156	145	107	-5	-10	-15	-20	-20	-20
93120300	5	11.2N	136.1E	40	18	13	8	5	34	100	0	0	5	10	5	-10
93120306	6	11.6N	134.4E	45	17	13	36	66	103	161	0	0	0	5	0	-5
93120312	7	12.1N	132.6E	50	6	13	40	82	134	200	0	-5	0	0	-5	0
93120318	8	12.8N	130.9E	55	18	29	82	120	153	234	0	0	0	-5	-5	5

TYPHOON LOLA (35W) (CONTINUED)

93120400	9	13.4N	129.5E	60	8	30	59	109	126	231	0	5	5	-5	-10	0
93120406	10	13.8N	128.1E	65	8	42	79	120	147	236	0	0	0	-15	-10	-10
93120412	11	14.1N	126.8E	65	5	60	120	143	192	276	0	-5	0	-10	-5	-10
93120418	12	14.2N	125.7E	70	8	55	118	146	196	254	0	0	-5	-5	0	-20
93120500	13	14.3N	124.7E	75	6	47	54	113	167	209	-5	0	-5	0	-5	-35
93120506	14	14.2N	123.8E	80	0	26	77	106	122	121	0	5	0	5	-10	-50
93120512	15	14.1N	123.0E	80	6	37	94	119	136	138	0	5	5	0	-10	-65
93120518	16	14.0N	122.0E	75	6	42	79	110	130	146	0	5	5	-5	-15	-55
93120600	17	13.8N	120.8E	70	8	45	85	94	72	130	0	5	5	-5	-30	-10
93120606	18	13.3N	119.8E	65	6	13	8	8	61	393	0	10	0	-10	-45	5
93120612	19	12.9N	118.9E	60	0	17	29	42	95	407	-5	-5	-15	-35	-70	0
93120618	20	12.5N	118.0E	55	6	18	26	53	139		-5	-15	-25	-55	-65	
93120700	21	12.1N	117.1E	55	17	24	48	76	153		0	-5	-25	-55	-5	
93120706	22	11.8N	116.2E	60	35	82	135	225	351		-5	-10	-40	-45	10	
93120712	23	11.5N	115.2E	60	23	59	110	222	360		-5	-20	-55	0	20	
93120718	24	11.2N	114.1E	65	41	89	179	329			-10	-35	-45	15		
93120800	25	11.1N	113.0E	75	30	61	145	254			-5	-30	30	25		
93120806	26	11.1N	111.8E	90	8	59	165				0	0	20			
93120812	27	11.3N	110.5E	105	11	81	222				10	45	30			
93120818	28	11.8N	108.9E	95	21	109					0	20				
93120900	29	12.4N	107.2E	50	26	110					0	0				
93120906	30	13.6N	105.6E	35	66						0					
			AVERAGE		21	55	99	136	168	220	2	9	13	14	17	19
			# CASES		30	29	27	25	23	19	30	29	27	25	23	19

TYPHOON MANNY (36W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93120306	1	7.0N	154.2E	25	21	77	142	184	204	244	0	0	10	10	5	10
93120312	2	7.1N	152.2E	25	101	172	243	261	272	274	0	0	5	5	0	15
93120318	3	7.3N	150.2E	30	85	152	194	219	246	222	0	5	5	5	0	15
93120400	4	7.5N	148.1E	30	5	72	102	111	87	221	0	5	5	0	0	15
93120406	5	7.7N	146.0E	30	23	64	87	76	122	290	0	-5	-5	-5	0	10
93120412	6	7.8N	144.0E	35	13	30	66	84	188	344	-5	-10	-10	-5	5	10
93120418	7	8.1N	142.2E	40	16	32	54	128	185	393	-5	-5	-5	0	10	10
93120500	8	8.6N	140.5E	45	12	13	43	115	192	452	0	-5	0	15	25	10
93120506	9	9.3N	138.8E	50	8	51	67	84	79	183	0	0	10	20	20	0
93120512	10	10.0N	137.1E	55	8	38	63	75	129	257	0	5	15	20	20	-5
93120518	11	10.7N	135.2E	60	16	70	105	135	202	315	0	10	20	20	15	-5
93120600	12	11.6N	133.6E	60	37	140	180	307	460	674	0	15	20	15	0	-25
93120606	13	12.7N	133.0E	60	8	23	89	210	376	540	0	5	-5	-10	-25	-50
93120612	14	13.6N	132.1E	55	16	13	62	156	283	466	0	5	0	-15	-30	-75
93120618	15	14.2N	131.0E	55	8	32	111	233	352	486	0	0	-5	-20	-30	-70
93120700	16	14.9N	130.2E	55	24	75	146	248	329	432	0	0	-10	-25	-35	-60
93120706	17	15.4N	129.8E	60	5	37	116	218	359	584	5	-5	-15	-25	-45	-40
93120712	18	15.9N	129.6E	60	12	80	190	361	554	914	0	-10	-25	-35	-75	-45
93120718	19	16.3N	129.7E	65	18	111	253	458	674	1036	-5	-15	-25	-45	-70	-30
93120800	20	16.5N	129.9E	70	8	49	149	233	288	301	-5	-15	-25	-65	-45	20
93120806	21	16.3N	130.1E	75	5	66	171	243	287	310	0	-10	-35	-60	-25	30
93120812	22	15.9N	129.9E	80	8	97	144	196	209	264	5	0	-30	-15	0	35
93120818	23	15.2N	129.4E	80	16	78	122	188	234	311	0	-15	-40	-10	15	40
93120900	24	14.4N	128.6E	85	11	35	65	99	121	185	-5	-40	-30	-15	10	30
93120906	25	13.7N	127.6E	95	0	34	70	82	111	170	-10	-30	-15	-5	20	35
93120912	26	13.3N	126.4E	120	5	18	0	50	117	158	-5	0	10	20	20	35
93120918	27	12.8N	125.2E	115	11	6	8	48	108	125	5	20	25	30	25	35
93121000	28	12.5N	124.0E	105	13	36	34	34	50	85	0	10	25	25	40	45
93121006	29	12.5N	122.8E	85	30	42	37	34	30	74	0	15	30	35	45	40
93121012	30	12.5N	121.8E	80	21	13	60	67	46	37	0	20	25	40	45	35

TYPHOON MANNY (36W) (CONTINUED)

93121018	31	12.3N	120.9E	65	26	74	128	121	109	146	0	15	20	25	30	20
93121100	32	12.0N	120.0E	50	41	106	125	109	128	196	5	15	25	25	30	25
93121106	33	11.5N	119.2E	40	13	51	58	76	106	204	5	10	20	20	20	25
93121112	34	10.9N	118.5E	40	23	30	77	82	80	153	0	10	5	15	10	15
93121118	35	10.6N	117.8E	35	54	104	168	201	224	258	0	0	0	-10	-15	-10
93121200*	36	10.6N	117.0E	30	45	83	117	156			0	0	0	-10		
93121206	37	10.7N	116.3E	30	36	42	36	36	54	267	0	5	5	5	10	10
93121212	38	10.9N	115.6E	30	5	18	21	66	199	354	0	5	0	10	10	-5
93121218	39	10.9N	114.9E	30	6	30	42	138	280	380	0	0	0	10	0	-5
93121300	40	10.8N	114.1E	30	26	32	77	216	335		0	-10	0	0	-10	
93121306	41	10.8N	113.3E	35	18	26	109	247	311		0	-5	5	0	-10	
93121312	42	10.8N	112.5E	40	11	48	165	268			-5	5	0	0		
93121318	43	10.7N	111.6E	40	26	102	233	305			-5	0	-5	-10		
93121400	44	10.2N	110.6E	35	48	178	281				-5	-10	-10			
93121406	45	9.4N	109.3E	35	69	200	253	251			-5	-5	-5	-5		
93121412	46	8.4N	107.8E	35	91	198	225				-5	0	0			
93121418	47	7.6N	106.1E	35	114	178	199				-5	0	0			
93121500	48	7.2N	104.6E	30	43	42	85				0	5	0			
93121506	49	7.1N	103.2E	30	5	75					-5	0				
93121512	50	7.3N	102.0E	25	24	43					0	-5				
			AVERAGE		26	69	117	164	219	324	2	8	12	17	21	26
			# CASES		50	50	48	44	40	38	50	50	48	44	40	38

* TD Warning Issued

TYPHOON NELL (37W)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93122312*	1	7.3N	140.0E	30	0	30	67	100			-5	-10	-15	-20		
93122400*	2	7.7N	137.7E	35	18	47	86	148			-10	-20	-20	-35		
93122412*	3	8.3N	135.3E	45	18	24	63	104			-15	-20	-35	-40		
93122500	4	8.5N	132.7E	50	17	51	86	90	122	126	-15	-20	-20	-10	-15	5
93122506	5	8.5N	131.3E	60	13	24	53	101	134	93	-15	-10	-10	-10	-10	15
93122512	6	8.6N	129.8E	65	13	43	102	181	205	90	-10	-15	-5	-5	-5	15
93122518	7	8.8N	128.3E	65	29	74	145	214	207		-5	-5	0	0	-5	
93122600	8	9.2N	126.8E	70	11	43	102	121	72		-5	-10	-15	-5	10	
93122606	9	9.7N	125.5E	65	21	59	98	101	70		0	-5	-10	0	20	
93122612	10	10.3N	124.3E	65	18	36	25	54	151		0	-5	-5	10	30	
93122618	11	10.9N	123.1E	65	5	13	32	109			0	5	10	25		
93122700	12	11.6N	122.1E	65	34	66	141	248			0	10	20	30		
93122706	13	12.0N	121.1E	60	23	56	131				0	5	20			
93122712	14	12.1N	120.0E	55	34	117	208				0	10	20			
93122718	15	11.9N	119.0E	50	5	36					0	15				
93122800	16	11.5N	118.1E	40	16	50					0	5				
93122806	17	11.0N	117.1E	30	18						0					
			AVERAGE		18	49	96	131	138	104	5	11	15	16	14	12
			# CASES		17	16	14	12	7	3	17	16	14	12	7	3

* TD Warning Issued

6.2.2 NORTH INDIAN OCEAN

This section includes verification statistics for each warning in the North Indian Ocean during 1993.

JTWC FORECAST TRACK AND INTENSITY ERRORS BY WARNING

TROPICAL CYCLONE 01A

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93111218	1	15.3N	64.9E	40	47	71	149	258	395	651	-5	-10	-10	-20	-15	15
93111300	2	16.0N	64.3E	45	31	29	61	165	258	396	-5	-10	-10	-15	0	35
93111306	3	16.8N	63.7E	55	16	59	148	231	305		0	0	-5	0	15	
93111312	4	17.6N	63.3E	60	33	99	196	279	342		0	-5	-10	10	20	
93111318	5	18.4N	63.1E	65	47	123	219	286	360		0	-5	5	20	30	
93111400	6	19.3N	63.2E	70	12	78	144	195	243		0	-5	15	30	40	
93111406	7	20.1N	63.6E	75	33	96	139	174			0	0	25	35		
93111412	8	20.9N	64.2E	80	18	55	114	234			5	30	50	35		
93111418	9	21.6N	64.8E	75	30	72	162				10	30	25			
93111500	10	22.2N	65.4E	65	55	163	356				15	0	-5			
93111506	11	22.6N	66.1E	55	6	78					-5	0				
93111512	12	22.7N	66.8E	45	36	124					0	5				
93111518	13	22.6N	67.5E	35	48						5					
93111600	14	22.3N	67.9E	25	5						5					
			AVERAGE		30	88	169	228	318	524	4	8	16	21	20	25
			# CASES		14	12	10	8	6	2	14	12	10	8	6	2

TROPICAL CYCLONE 02B

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93113012	1	7.6N	91.8E	25	16	17	53	89	118	167	5	5	10	10	5	-25
93113018	2	7.8N	90.9E	30	8	30	59	89	133	185	0	5	5	5	0	-40
93120100	3	8.0N	89.9E	30	77	131	185	227	249	251	0	5	5	0	-5	-35
93120106	4	8.2N	89.1E	30	85	139	189	244	274	221	0	0	0	-5	-25	-40
93120112	5	8.3N	88.2E	30	46	81	124	147	157	65	0	-5	-10	-15	-25	-30
93120118	6	8.5N	87.4E	35	50	66	85	93	81	29	-5	-10	-20	-30	-45	-20
93120200	7	8.7N	86.6E	35	24	42	77	90	69	150	-5	-10	-20	-35	-40	-10
93120206	8	8.8N	85.8E	40	21	55	75	77	38	136	-5	-10	-15	-30	-25	-5
93120212	9	8.9N	85.1E	45	6	29	38	37	96	239	-10	-15	-25	-30	-20	0
93120218	10	9.0N	84.3E	50	25	46	45	69	138	277	-10	-20	-35	-25	-5	0
93120300	11	9.1N	83.4E	55	18	26	51	110	165		0	-5	-10	-5	-5	
93120306	12	9.3N	82.6E	60	0	26	74	115	150		0	-10	-5	-10	0	
93120312	13	9.6N	81.8E	65	18	48	108	151	178		-5	-5	5	0	0	
93120318	14	9.9N	81.1E	75	32	78	140	189	197		-15	0	20	5	0	
93120400	15	10.5N	80.4E	70	37	96	149	195			-5	5	0	0		
93120406	16	11.2N	79.6E	65	13	42	76	138			10	0	0	-5		
93120412	17	11.8N	78.5E	55	11	53	105				15	10	0			
93120418	18	12.4N	77.4E	40	42	77	164				10	10	0			
93120500	19	13.0N	76.3E	30	6	29					0	0				
93120506	20	13.6N	75.2E	25	6	26					0	0				
93120512	21	14.0N	74.1E	25	6						0					
93120518	22	14.2N	73.0E	25	5						0					
			AVERAGE		26	57	100	129	146	173	5	7	10	13	14	21
			# CASES		22	20	18	16	14	10	22	20	18	16	14	10

6.2.3 SOUTHERN HEMISPHERE

This section includes verification statistics for each warning in the South Indian and western South Pacific Ocean from 1 July 1992 to 30 June 1993.

JTWC FORECAST TRACK AND INTENSITY ERRORS BY WARNING

TROPICAL CYCLONE 01S (AVIONA)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
92092712	1	8.5S	88.0E	50	13	46	112	179	224		-15	-20	-15	-10	-5	
92092800	2	9.2S	87.3E	65	18	56	120	178	216		-5	0	10	25	30	
92092812	3	10.2S	86.7E	65	6	29	66	117	149		0	5	20	30	35	
92092900	4	11.5S	86.1E	60	18	36	60	96	110		5	15	20	20	20	
92092912	5	12.7S	85.1E	50	53	60	47	51	60		10	10	10	10	10	
92093000	6	13.7S	84.1E	45	11	25	37	16			10	10	10	10		
92093012	7	14.5S	82.9E	40	16	5	13				0	-5	-5			
92100100	8	14.8S	81.3E	35	23	46					0	0				
			AVERAGE		20	38	65	107	152		6	8	13	18	20	
			# CASES		8	8	7	6	5		8	8	7	6	5	

TROPICAL CYCLONE 02S (BABIE)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
92101818	1	10.2S	81.8E	30	54	126	173	243	287		0	5	5	5	15	
92101906	2	10.8S	81.6E	35	13	26	51	79	96		5	5	10	25	30	
92101918	3	11.4S	81.4E	40	79	153	202	242			5	5	15	30		
92102006	4	12.0S	81.2E	45	56	85	128				5	15	30			
92102018	5	12.6S	80.7E	40	101	145					10	15				
92102106	6	13.1S	79.8E	35	13						0					
			AVERAGE		53	108	139	189	192		4	9	15	20	23	
			# CASES		6	5	4	3	2		6	5	4	3	2	

TROPICAL CYCLONE 03P (JONI)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
92120600	1	9.8S	180.0W	40	21	32	80	142	161		0	-5	0	-5	-25	
92120612	2	10.6S	179.9E	50	5	25	73	90	107		0	-5	-10	-25	-30	
92120700	3	11.7S	179.5E	55	16	54	61	81	112		0	-5	-15	-25	-30	
92120712	4	12.7S	178.5E	65	8	51	79	91	118		0	-20	-25	-25	-30	
92120800	5	13.2S	177.9E	85	13	47	112	206	304		0	5	10	10	0	
92120812	6	13.9S	177.3E	95	17	37	96	183	303		0	0	5	5	5	
92120900	7	14.8S	176.8E	100	11	28	54	92	132		0	-5	-15	-15	-5	
92120912	8	15.8S	176.6E	105	11	12	54	105	162		-10	-15	-15	-5	-5	
92121000	9	16.8S	176.6E	110	11	16	34	61	102		0	5	20	15	5	
92121006	10	17.4S	176.8E	110	8	42	68	113	144		0	10	15	10	0	
92121012	11	17.9S	177.1E	105	11	40	82	152	207		5	20	15	15	5	
92121018	12	18.4S	177.5E	95	18	38	74	101	132		10	20	20	20	15	
92121100	13	18.9S	177.9E	85	5	18	73	139			0	-10	-15	-25		
92121112	14	19.8S	179.0E	75	12	46	113	301			-5	-5	-10	-10		
92121200	15	20.5S	179.4W	65	5	49	199				0	0	0			
92121212*	16	22.4S	177.5W	55	17	126					0	-5				
92121218*	17	26.9S	175.0W	40	68						0					
			AVERAGE		15	41	84	133	166		2	9	13	15	13	
			# CASES		17	16	15	14	12		17	16	15	14	12	

* Warning Issued By NAVPACMETOCCEN

TROPICAL CYCLONE 04S

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
92120718	1	8.6S	49.3E	35	38	59	93	128	163		0	5	10	20	30	
92120800	2	8.6S	48.7E	35	18	26	40	84	135		0	5	10	20	30	
92120806	3	8.6S	48.1E	35	21	40	67	114	168		0	5	10	10	10	
92120812	4	8.5S	47.6E	35	25	30	51	97	163		0	5	10	10	10	
92120818	5	8.5S	47.1E	35	32	66	118	152	241		0	10	10	15	10	
92120900	6	8.5S	46.6E	35	41	78	120	170	296		0	10	5	5	0	
92120906	7	8.5S	46.1E	30	17	45	76	159			5	5	5	5		
92120912	8	8.4S	45.6E	30	53	89	135	240			5	0	0	0		
92120918	9	8.4S	45.2E	30	17	18	94				5	5	0			
92121000	10	8.4S	44.7E	30	33	42	81				0	0	0			
92121006	11	8.2S	44.1E	25	11	64					0	0				
92121012	12	7.8S	43.5E	25	11	99					0	-10				
			AVERAGE		27	55	88	144	195		1	5	6	11	15	
			# CASES		12	12	10	8	6		12	12	10	8	6	

TROPICAL CYCLONE 05S (KEN)

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
92121912	1	12.6S	96.0E	35	53	93	146	192	196		0	0	10	20	25	
92122000	2	13.6S	94.5E	45	29	55	47	66	142		0	5	5	10	20	
92122012	3	15.0S	93.4E	40	29	64	107	168	270		0	-5	-5	-10	-5	
92122100	4	16.0S	91.9E	40	34	63	115	189	240		0	0	0	10	25	
92122112	5	16.1S	90.4E	40	21	98	200	272	314		0	0	0	5	5	
92122200	6	15.5S	88.8E	40	18	92	169	230			0	5	10	0		
92122212	7	14.4S	86.6E	35	24	55	70				0	5	0			
92122300	8	13.7S	84.2E	25	21	21					0	5				
92122312	9	13.5S	81.8E	25	6						0					
			AVERAGE		26	68	123	186	233		0	3	4	9	16	
			# CASES		9	8	7	6	5		9	8	7	6	5	

TROPICAL CYCLONE 06P (NINA)

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
92122318	1	11.9S	139.8E	35	11	45	88	125	160		0	0	-5	-10	10	
92122406	2	12.5S	140.5E	40	18	65	110	147	195		5	0	-5	15	25	
92122418	3	13.5S	141.0E	50	18	23	32	72	124		5	-5	5	10	10	
92122500	4	14.0S	141.2E	55	17	48	106	162	247		15	20	20	10	5	
92122506	5	14.2S	141.5E	60	13	60	118	174	264		5	20	25	15	0	
92122518	6	14.4S	142.0E	45	13	24	18	46	88		20	15	5	-15	-20	
92122606	7	14.4S	142.6E	35	5	29	69	108	120		10	10	0	-10	-20	
92122618	8	14.2S	143.1E	30	11	62	112	128	154		15	5	-5	-20	-30	
92122706	9	13.7S	143.9E	35	0	24	13	24	75		0	0	0	0	0	
92122718	10	13.2S	145.0E	40	11	42	96	163	209		-5	-15	-20	-15	-5	
92122806	11	13.4S	146.2E	50	5	13	46	64	5		0	0	5	5	-5	
92122818	12	13.8S	147.7E	60	16	55	79	36	48		0	0	5	0	0	
92122906	13	14.4S	149.7E	65	29	48	23	75	112		-10	-15	-25	-25	-30	
92122918	14	15.1S	151.3E	65	8	100	175	260	338		0	-10	-15	-25	-35	
92123006	15	14.5S	152.6E	70	5	26	53	108	167		5	10	10	0	-10	
92123018	16	13.8S	153.7E	65	5	32	77	119	180		0	0	-5	-5	-10	
92123106	17	13.1S	155.2E	65	24	74	126	198	316		0	-5	-10	-20	-25	
92123118	18	12.3S	156.9E	70	18	47	103	201	322		-5	-5	-15	-15	-15	
93010106	19	11.7S	159.2E	70	35	104	228	382	597		-5	-10	-15	-10	-5	
93010118	20	11.5S	162.2E	75	18	58	142	260	424		0	-5	0	5	15	
93010206	21	11.4S	166.1E	75	35	106	240	399	504		0	-5	0	5	10	
93010218	22	11.4S	170.6E	70	13	75	181	253			0	5	0	-5		

TROPICAL CYCLONE 06P (NINA) (CONTINUED)

93010300	23	11.6S	173.3E	65	5	29	75	254			0	5	5	0		
93010306	24	11.9S	176.0E	60	34	105	222	448			0	0	0	5		
93010312	25	12.3S	179.0E	55	17	12	62				0	5	10			
93010318	26	13.1S	178.0W	50	8	41	102				5	10	10			
93010406*	27	16.5S	173.2W	40	29	100					0	10				
93010418*	28	21.3S	169.3W	25	185						-5					
			AVERAGE		22	54	104	175	221		4	7	8	10	14	
			# CASES		28	27	26	24	21		28	27	26	24	21	

* Warning Issued By NAVPACMETOCCEN

TROPICAL CYCLONE 07P (KINA)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
92122618	1	10.0S	170.0E	35	13	5	18	33	53		0	5	5	-5	-10	
92122706	2	11.1S	170.5E	40	13	32	79	135	201		5	5	-5	-10	-10	
92122718	3	12.1S	170.8E	50	13	18	24	50	90		5	-5	-15	-20	-10	
92122806	4	12.9S	171.4E	70	29	58	88	112	157		-10	-20	-30	-25	-5	
92122818	5	13.5S	172.0E	90	24	55	121	212	303		10	0	0	10	20	
92122906	6	14.1S	172.6E	110	5	45	95	146	188		0	5	15	25	30	
92122918	7	14.5S	172.7E	120	8	31	63	100	127		0	5	15	20	15	
92123006	8	14.8S	172.5E	115	18	55	96	175	269		10	15	25	25	20	
92123018	9	15.0S	172.4E	105	8	11	29	86	153		10	15	20	25	20	
92123106	10	15.2S	172.6E	95	6	26	68	130	192		5	5	5	5	-10	
92123118	11	15.6S	173.1E	90	18	48	115	176	226		0	-5	-5	-25	-40	
93010106	12	15.9S	174.2E	85	8	55	90	91	90		0	5	-10	-25	-20	
93010112	13	16.0S	174.9E	85	0	18	16	18	30		0	-5	-25	-25	-25	
93010118	14	16.1S	175.6E	80	8	31	70	120	177		0	-10	-25	-20	-15	
93010200	15	16.3S	176.4E	85	21	50	91	161	211		-5	-20	-20	-15	-5	
93010206	16	16.6S	177.3E	90	18	36	62	124	185		-5	-20	-15	-5	0	
93010212	17	17.1S	178.2E	100	8	41	79	98	129		0	5	5	10	5	
93010218	18	17.7S	179.2E	100	17	28	62	175	327		-5	-5	-5	-5	0	
93010300	19	18.5S	179.7W	95	8	46	76	102	264		0	0	5	0	10	
93010306	20	19.3S	178.4W	90	11	44	132	291			0	10	10	5		
93010318	21	21.7S	175.7W	75	16	17	104				5	10	10			
93010406*	22	24.3S	173.0W	60	57	37					5	5				
93010418*	23	28.1S	170.6W	50	152						5					
			AVERAGE		21	36	75	127	177		4	8	13	15	14	
			# CASES		23	22	21	20	19		23	22	21	20	19	

* Warning Issued By NAVPACMETOCCEN

TROPICAL CYCLONE 08P

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93010200*	1	18.5S	161.0W	30	49	194	353				0	-10	10			
93010212*	2	19.9S	156.7W	45	45	55					5	10				
93010300*	3	21.1S	152.1W	35	39						0					
			AVERAGE		45	125	353				2	10	10			
			# CASES		3	2	1				3	2	1			

* Warning Issued By NAVPACMETOCCEN

TROPICAL CYCLONE 09P

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
93011118*	1	12.0S	149.3W	30	6	111	179	216	393		0	5	15	30	40	
93011206*	2	11.4S	152.1W	30	26	106	373	671			0	5	15	30		
93011218*	3	12.6S	154.3W	30	88	348	669				10	20	25			
93011306*	4	15.6S	153.6W	25	29	62					5	5				
93011318*	5	18.7S	151.9W	25	30						0					
			AVERAGE		36	157	407	444	394		3	9	18	30	40	
			# CASES		5	4	3	2	1		5	4	3	2	1	

* Warning Issued By NAVPACMETOCCEN

TROPICAL CYCLONE 10S (COLINA)

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
93011418	1	10.7S	67.4E	35	21	41	91	118	141		0	-5	-5	5	20	
93011506	2	11.3S	66.0E	45	8	42	42	46	83		0	-5	0	10	20	
93011518	3	11.6S	64.3E	55	44	118	168	178	179		-5	0	10	20	20	
93011606	4	12.1S	63.1E	55	55	84	134	183	211		0	5	5	-5	-5	
93011618	5	12.8S	61.9E	50	25	51	40	85	168		0	0	0	0	-10	
93011706	6	13.7S	60.3E	50	13	34	25	90	150		0	-5	0	-10	-25	
93011718	7	14.0S	58.5E	55	6	42	117	174	237		0	5	0	-20	-25	
93011806	8	15.2S	57.4E	55	13	79	127	199	320		0	-5	-20	-30	-20	
93011818	9	17.2S	56.5E	65	24	49	99	183	299		-5	-15	-20	-15	0	
93011906	10	19.0S	55.5E	85	12	13	60	192	311		0	-5	5	20	25	
93011918	11	21.1S	54.9E	95	24	108	236	356			10	20	35	30		
93012006	12	24.2S	55.1E	90	28	141	277				0	10	5			
93012018	13	27.5S	57.3E	75	6	24					0	-5				
93012106	14	30.3S	61.2E	65	11						0					
			AVERAGE		21	64	118	164	211		1	7	9	15	17	
			# CASES		14	13	12	11	10		14	13	12	11	10	

TROPICAL CYCLONE 11S (DESSILIA)

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
93012012	1	20.7S	43.1E	35	48	172					0	10				
93012100	2	21.7S	45.5E	25	6						5					
			AVERAGE		27	173					3	10				
			# CASES		2	1					2	1				

TROPICAL CYCLONE 12S (EDWINA)

DTG	WRN NO.	BEST TRACK LAT	LONG	WIND	POSITION ERRORS 00	12	24	36	48	72	WIND ERRORS 00	12	24	36	48	72
93012018	1	12.1S	84.7E	35	48	88	142	217	296		0	-10	-10	-10	-10	
93012106	2	12.7S	83.5E	45	21	37	70	118	188		0	0	5	0	0	
93012118	3	13.1S	82.0E	50	29	70	123	188	241		0	5	0	0	-15	
93012206	4	13.3S	80.1E	50	0	18	34	58	78		5	0	0	-20	-40	
93012218	5	13.5S	77.8E	55	13	36	55	67	82		0	0	-20	-40	-35	
93012306	6	13.7S	75.4E	60	35	58	84	91	110		-5	-20	-45	-45	-35	
93012318	7	14.0S	73.0E	80	26	42	79	105	109		0	-10	0	10	15	
93012406	8	14.5S	70.6E	105	29	29	41	77	96		-5	-10	10	20	20	
93012418	9	15.0S	68.4E	110	40	57	75	79	43		-10	35	40	30	20	
93012506	10	15.5S	66.2E	100	13	42	79	111	136		10	10	15	10	0	
93012518	11	16.0S	64.1E	95	21	20	67	84	83		5	5	0	-15	-20	
93012606	12	16.9S	62.5E	90	37	56	62	58	57		5	0	-10	-15	-20	
93012618	13	18.2S	61.0E	90	16	34	35	40	91		0	0	0	-5	-15	
93012706	14	19.9S	60.0E	100	45	71	74	42	113		0	0	-5	-5	0	

TROPICAL CYCLONE 12S (EDWINA) (CONTINUED)

93012718	15	22.0S	59.6E	100	18	54	145	222	235	0	-5	-5	0	10
93012806	16	24.6S	59.3E	95	48	103	174	220		-5	-10	-5	10	
93012818	17	28.0S	59.4E	90	31	85	177			-5	5	20		
93012906	18	31.7S	59.0E	75	13	43				0	10			
93012918	19	35.3S	58.8E	50	60					15				
			AVERAGE		29	53	90	112	131	4	8	11	15	17
			# CASES		19	18	17	16	15	19	18	17	16	15

TROPICAL CYCLONE 13S (LENA)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93012412	1	14.8S	119.5E	35	52	42	13	0	66		0	-5	-5	0	10	
93012500	2	15.3S	118.9E	45	39	58	53	8	61		0	5	10	25	40	
93012512	3	15.9S	118.9E	50	13	28	70	120	150		5	0	15	25	35	
93012600	4	16.2S	118.1E	55	32	18	81	131	199		0	10	20	30	40	
93012612	5	15.9S	117.1E	50	29	84	161	247	351		-5	-5	0	10	30	
93012700	6	15.4S	116.1E	50	42	83	147	219	226		0	0	10	30	40	
93012712	7	15.5S	114.5E	50	16	36	94	63	48		0	5	20	35	45	
93012800	8	15.7S	112.7E	50	29	52	23	67	176		0	15	25	35	45	
93012812	9	15.9S	110.5E	40	40	32	77	155			0	0	-5	-10		
93012900	10	15.9S	109.4E	35	0	67	151	235			0	0	-5	-10		
93012912	11	15.8S	108.8E	35	13	59					-5	-10				
			AVERAGE		28	51	87	125	160		1	5	12	21	36	
			# CASES		11	11	10	10	8		11	11	10	10	8	

TROPICAL CYCLONE 14P

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93012606	1	13.4S	137.0E	30	38	133	213	294	408		0	0	10	30	40	
93012618	2	14.2S	135.7E	35	13	39	84	146	224		0	0	5	5	10	
93012706	3	14.5S	134.4E	35	41	88	148	208	263		0	10	5	10	10	
93012718	4	15.0S	133.2E	25	6	8					0	-5				
93012806	5	15.5S	131.8E	25	21	77					0	0				
93020600**	6	22.7S	112.7E	35	6	8	75	175	257		0	0	10	20	30	
93020612	7	22.4S	111.1E	35	6	53	144	239	234		0	5	15	20	20	
93020700	8	21.6S	108.6E	30	8	57					0	5				
			AVERAGE		18	58	133	213	278		0	3	9	17	22	
			# CASES		8	8	5	5	5		8	8	5	5	5	

** Regenerated Warning

TROPICAL CYCLONE 15P (LIN)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93013100*	1	12.6S	173.8W	35	58	26	24	136	444		10	10	-5	-20	-40	
93013112*	2	13.8S	172.0W	50	31	91	117	143	132		-10	-20	-20	-25	-20	
93020100*	3	15.5S	170.5W	65	18	29	21	36	133		-20	-15	-25	-20	10	
93020112*	4	17.4S	169.5W	75	24	136	299	452	681		-10	-25	-20	10	15	
93020200*	5	19.2S	168.2W	90	48	138	234	347	510		-5	5	35	45	55	
93020212*	6	20.6S	166.7W	85	86	142	233	366			5	30	40	40		
93020300*	7	21.5S	165.3W	55	23	93	204				0	0	0			
93020312*	8	22.5S	165.0W	40	40	121					5	5				
93020400*	9	23.2S	165.3W	30	13						0					
			AVERAGE		38	98	162	247	380		7	14	21	27	28	
			# CASES		9	8	7	6	5		9	8	7	6	5	

* Warning Issued By NAVPACMETOCCEN

TROPICAL CYCLONE 16P (OLIVER)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93020418	1	14.9S	150.0E	35	21	42	54	109	158		0	-5	-15	-25	-25	
93020506	2	14.6S	150.0E	45	34	68	139	219	252		0	-5	-25	-30	-35	
93020518	3	15.2S	150.6E	60	13	42	75	77	75		5	-5	0	0	-10	
93020606	4	15.6S	151.4E	80	5	30	45	71	84		-5	-10	-10	-25	-30	
93020618	5	16.1S	152.1E	90	26	83	149	166	151		-5	-15	-35	-35	-30	
93020706	6	16.8S	152.2E	100	11	37	55	78	111		-10	-25	-30	-20	-20	
93020718	7	17.4S	151.9E	115	11	18	58	130	229		-5	-5	0	5	10	
93020806	8	18.0S	151.9E	115	8	18	56	107	167		-5	5	5	15	25	
93020818	9	18.6S	152.0E	100	8	36	73	109	127		0	0	10	25	30	
93020906	10	19.4S	152.6E	95	0	26	64	88	105		0	10	20	25	30	
93020918	11	19.8S	153.4E	80	16	8	13	28	45		0	5	10	15	15	
93021006	12	20.0S	154.2E	65	21	49	94	151	241		0	0	10	10	5	
93021018	13	20.5S	154.8E	55	6	23	53	103	189		0	10	10	5	10	
93021106	14	21.1S	155.2E	40	17	46	106				-5	-5	-10			
93021118	15	21.8S	155.5E	35	17	37	94	203			0	0	0	0		
93021206	16	22.7S	155.4E	35	16	77	207				5	5	10			
93021218	17	22.9S	154.4E	30	47	152					5	5				
			AVERAGE		17	47	84	118	149		3	7	13	17	21	
			# CASES		17	17	16	14	13		17	17	16	14	13	

TROPICAL CYCLONE 17P (MICK)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93020518*	1	17.1S	172.6W	30	65	96	112	150	184		10	10	15	-5	-5	
93020606*	2	18.3S	173.7W	35	30	69	100	111	128		-5	-5	-15	-20	-20	
93020618*	3	18.7S	175.5W	35	18	62	150	194	252		0	5	5	0	0	
93020706*	4	19.2S	177.2W	45	56	74	195	372	491		0	15	10	10	5	
93020718*	5	20.5S	178.5W	45	74	112	120	764			-10	0	5	0		
93020806*	6	22.3S	179.6W	45	64	87	125				-10	5	5			
93020818*	7	24.0S	179.4E	40	30	52					-10	-10				
93020906*	8	25.4S	178.6E	35	55						-5					
			AVERAGE		49	79	134	319	264		6	7	9	7	8	
			# CASES		8	7	6	5	4		8	7	6	5	4	

* Warning Issued By NAVPACMETOCCEN

TROPICAL CYCLONE 18P (NISHA)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93021200*	1	12.8S	165.2W	25	67	133	130	96	49		5	5	-5	-5	-5	
93021212*	2	15.4S	164.2W	30	41	181	299	457	582		0	-10	-15	-25	-30	
93021300*	3	17.6S	163.4W	45	24	101	182	219	195		10	10	-10	-25	-30	
93021312*	4	19.1S	162.1W	50	18	94	194	308	402		0	-5	-15	-20	-20	
93021400*	5	20.2S	159.9W	60	45	107	196	269	295		-20	-30	-30	-25	-20	
93021412*	6	21.7S	156.9W	65	53	96	135	137	171		0	-5	-10	-10	0	
93021500*	7	23.5S	153.4W	60	17	24	85	297			-5	-5	-5	5		
93021512*	8	25.8S	149.8W	50	16	129	365				0	-5	5			
93021600*	9	28.5S	146.6W	45	24	240					0	10				
93021612*	10	32.1S	145.3W	30	67						5					
			AVERAGE		38	123	199	255	283		5	9	12	16	18	
			# CASES		10	9	8	7	6		10	9	8	7	6	

* Warning Issued By NAVPACMETOCCEN

TROPICAL CYCLONE 19S (FINELLA)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93021306	1	22.7S	51.1E	40	37	76	185	304	351		0	-5	-5	5	10	
93021318	2	24.5S	52.6E	60	37	72	114	126	89		-15	-20	-5	0	-10	
93021406	3	26.2S	54.8E	75	6	28	132	161	155		-5	5	10	5	0	
93021418	4	27.9S	56.9E	75	13	80	97	98			0	5	5	10		
93021506	5	29.8S	57.5E	65	26	110	154				5	5	10			
93021518	6	31.1S	58.7E	55	6	31					0	5				
			AVERAGE		21	67	137	173	199		4	8	7	5	7	
			# CASES		6	6	5	4	3		6	6	5	4	3	

TROPICAL CYCLONE 20P (OLI)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93021612	1	17.5S	176.7E	40	39	58	90	142			-5	-5	5	30		
93021700	2	19.4S	178.0E	50	5	11	64				0	5	5			
93021712	3	21.7S	179.6E	50	11	52					0	5				
93021800	4	24.1S	178.4W	40	8						0					
			AVERAGE		16	41	78	143			1	5	5	30		
			# CASES		4	3	2	1			4	3	2	1		

TROPICAL CYCLONE 21P (POLLY)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93022500	1	15.8S	157.9E	35	8	29	49	74	105		0	0	-5	-5	0	
93022512	2	16.8S	158.2E	45	18	16	29	61	109		-5	-10	-5	5	0	
93022518	3	17.2S	158.4E	55	11	57	104	159	217		0	10	20	20	10	
93022600	4	17.5S	158.6E	60	8	12	26	88	161		5	5	15	15	5	
93022612	5	18.0S	159.1E	70	12	29	62	85	64		0	5	5	-5	-15	
93022700	6	18.2S	159.6E	75	34	54	66	53	53		-10	-20	-30	-40	-35	
93022712	7	18.3S	160.1E	85	11	11	39	41	65		0	-5	-10	-10	-15	
93022800	8	18.6S	160.3E	95	6	54	88	123	269		-5	-10	-10	-15	-20	
93022812	9	19.5S	159.9E	100	16	78	215	376	482		0	5	20	15	5	
93030100	10	20.8S	160.3E	95	24	126	310	485	578		5	10	15	15	25	
93030112	11	22.3S	162.2E	90	8	37	92	132			0	-5	-10	-5		
93030200	12	24.6S	165.6E	85	30	69	86				0	-5	0			
93030212	13	27.3S	169.7E	75	13	161					0	10				
93030300	14	30.2S	173.4E	55	11						0					
			AVERAGE		15	57	98	153	211		2	8	12	14	13	
			# CASES		14	13	12	11	10		14	13	12	11	10	

TROPICAL CYCLONE 22P (ROGER)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93031200	1	10.3S	157.2E	25	24	62	147	214	263		5	5	5	10	20	
93031212	2	11.6S	156.3E	30	54	106	173	237	310		0	0	5	15	20	
93031300	3	13.3S	156.2E	40	41	91	166	227	222		0	5	15	25	20	
93031312	4	14.7S	155.9E	45	51	42	45	68	97		0	5	10	15	20	
93031400	5	15.9S	155.6E	45	34	41	33	86	116		0	0	5	15	25	
93031412	6	17.1S	155.5E	50	8	43	121	148	154		-5	-10	0	10	15	
93031500	7	18.7S	155.6E	55	43	111	131	139	150		-5	-5	5	10	15	
93031512	8	20.7S	156.0E	55	34	118	186	254			-10	-5	-10	-20		
93031600	9	22.1S	155.8E	50	57	105	154	265			-10	-15	-20	-15		
93031612	10	23.1S	155.7E	50	20	45	94	229	435		-10	-15	-10	-5	-5	
93031700	11	24.2S	155.7E	50	23	94	206	326			-5	-5	-5	-5		

TROPICAL CYCLONE 22P (ROGER) (CONTINUED)

93031712	12	24.2S	156.2E	45	22	95	163				-5	-5	-5		
93031800	13	23.4S	157.0E	40	20	70					-5	-5			
			AVERAGE		34	79	135	200	219		5	6	8	13	18
			# CASES		13	13	12	11	8		13	13	12	11	8

TROPICAL CYCLONE 23P (PREMA)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93032712	1	14.3S	171.5E	40	11	5	26	62	100		0	-10	-40	-60	-65	
93032800	2	14.9S	171.0E	60	13	6	50	75	81		0	-25	-45	-50	-55	
93032812	3	15.4S	170.3E	95	11	50	75	95	81		-15	-20	-20	-25	-35	
93032900	4	15.9S	169.2E	120	28	29	54	91	186		-10	-5	-5	-15	-15	
93032906	5	16.4S	168.7E	125	23	13	37	116	260		-5	-5	-15	-10	-5	
93032912	6	17.0S	168.2E	125	8	8	38	150	307		-5	-5	-10	-10	0	
93032918	7	17.7S	167.8E	125	8	8	95	226	370		-5	-5	-5	0	10	
93033000	8	18.5S	167.5E	125	8	39	172	346	487		-5	-5	0	15	20	
93033006	9	19.3S	167.4E	125	0	101	277	469	618		-10	-10	0	15	25	
93033012	10	20.3S	167.9E	125	8	78	219	352	453		-15	-10	10	20	20	
93033018	11	21.1S	168.8E	120	20	111	229	313			-10	0	15	25		
93033100	12	22.0S	170.0E	115	30	104	187	271			-5	15	25	35		
93033112	13	24.0S	173.6E	90	18	80	210				10	10	10			
93040100	14	25.7S	177.8E	70	24	30					0	0				
			AVERAGE		15	48	129	214	295		7	9	15	23	25	
			# CASES		14	14	13	12	10		14	14	13	12	10	

TROPICAL CYCLONE 24S (JOURDANNE)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93040306	1	14.4S	84.6E	35	17	68	151	222	290		0	10	10	0	-15	
93040318	2	14.4S	83.0E	35	5	51	79	106	157		0	0	-10	-25	-35	
93040406	3	15.1S	81.3E	45	13	21	13	67	125		0	-10	-25	-35	-45	
93040418	4	16.0S	79.6E	65	8	18	45	92	190		0	-5	-20	-35	-45	
93040506	5	16.7S	77.8E	90	21	43	82	164	269		0	-10	-15	-20	-15	
93040518	6	17.6S	76.4E	110	20	24	75	158	241		-5	-10	-10	-10	-5	
93040606	7	18.6S	75.4E	125	11	75	162	254	363		-5	-5	0	5	5	
93040618	8	19.2S	75.2E	120	11	58	105	168	241		-5	0	10	10	10	
93040706	9	19.6S	75.4E	110	36	90	150	227	318		0	10	10	20	20	
93040718	10	19.8S	75.6E	95	0	8	30	66	97		0	0	5	0	0	
93040806	11	20.0S	75.8E	85	12	34	55	61			5	15	15	20		
93040818	12	20.2S	75.8E	65	49	66	87				0	0	10			
93040906	13	20.6S	76.1E	55	8	16					5	20				
93040918	14	21.3S	76.5E	35	0						0					
			AVERAGE		16	44	87	145	230		2	7	12	16	20	
			# CASES		14	13	12	11	10		14	13	12	11	10	

TROPICAL CYCLONE 25S (MONTY)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93041018	1	16.1S	105.5E	40	12	74	172	240	267		0	0	15	35	35	
93041106	2	17.5S	106.2E	50	37	106	158	166	173		0	10	30	30	25	
93041118	3	18.8S	107.5E	45	5	48	112				0	5	5			
93041206	4	19.3S	108.3E	30	18	71					0	0				
			AVERAGE		18	75	148	204	220		0	4	17	33	30	
			# CASES		4	4	3	2	2		4	4	3	2	2	

TROPICAL CYCLONE 26S (KONITA)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93050212	1	7.4S	71.4E	45	26	36	45	64	60		-5	-5	-10	-30	-45	
93050218	2	7.7S	71.0E	50	29	36	54	90	125		-5	0	-5	-20	-35	
93050300	3	7.9S	70.6E	50	72	91	126	163	202		5	5	0	-10	-25	
93050306	4	8.2S	70.1E	55	72	103	145	180	218		0	0	-5	-10	-30	
93050312	5	8.5S	69.6E	55	51	88	144	214	310		0	-5	-10	-10	0	
93050400	6	9.2S	68.6E	65	70	118	186	276	365		-10	-15	-20	-10	15	
93050412	7	10.0S	68.2E	75	8	42	79	159	260		0	0	5	15	30	
93050500	8	10.7S	68.3E	85	8	34	96	187	276		-10	0	20	40	40	
93050512	9	11.2S	68.4E	85	16	74	160	227	257		0	15	35	35	25	
93050600	10	11.2S	68.6E	70	64	145	218	250			10	30	35	35		
93050612	11	10.7S	68.9E	45	11	8	8				10	15	15			
93050700	12	10.4S	68.7E	35	8	26					5	5				
93050712	13	10.7S	68.3E	30	5						0					
			AVERAGE		34	67	115	182	231		5	8	15	22	27	
			# CASES		13	12	11	10	9		13	12	11	10	9	

NOTE: Intensity peaked at 93050506 at 90kt between warning times

TROPICAL CYCLONE 27P (ADEL)

	WRN	BEST TRACK			POSITION ERRORS						WIND ERRORS					
DTG	NO.	LAT	LONG	WIND	00	12	24	36	48	72	00	12	24	36	48	72
93051306	1	6.2S	155.5E	30	48	129	223	270	277		0	-5	0	15	35	
93051318	2	7.8S	154.0E	40	45	104	146	154	200		-5	0	15	35	35	
93051406	3	8.9S	151.8E	45	11	23	73	71	103		0	5	5	15	25	
93051418	4	9.6S	149.9E	40	11	70	65	119			0	5	10	20		
93051506	5	10.3S	148.7E	35	17	43	206				0	10	20			
93051518	6	10.5S	146.7E	30	59	217					5	10				
93051606	7	9.0S	143.8E	25	43						5					
			AVERAGE		34	98	143	154	194		2	6	10	21	32	
			# CASES		7	6	5	4	3		7	6	5	4	3	